Cities in Trouble
(page 16)

International Management Digest®

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OCTOBER 1960
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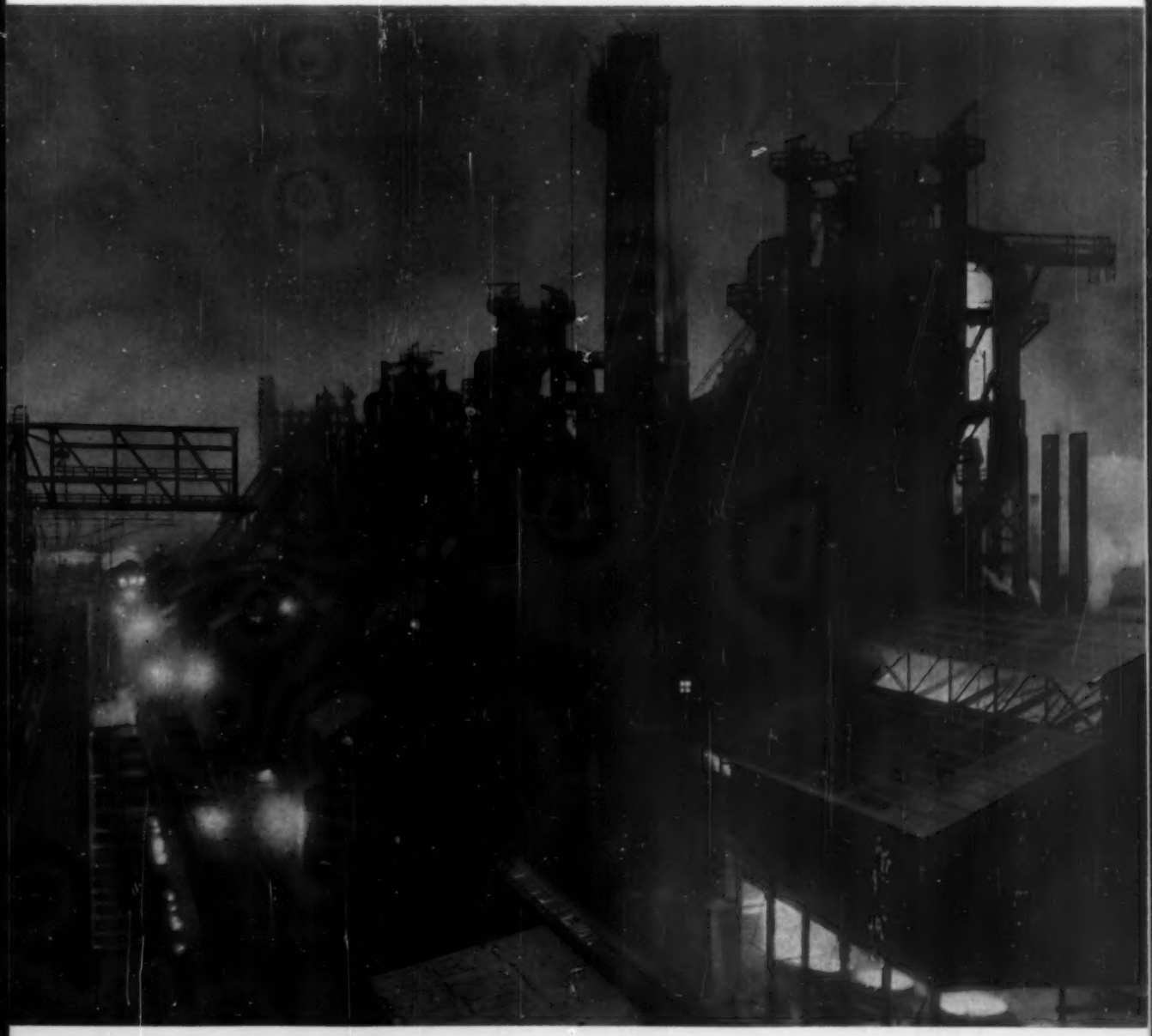

From blast furnace to retail shop, steel gets fighting mad

(see Industries)

Hard-working, fast-moving Michigan Tractor Shovel takes a 1¼-cu.-yd. bite of sand at Palmetto Quarries, Columbia, S.C. Model 75A (shown) is one of a complete line of tractor shovels built by The Construction Machinery Division of Clark Equipment Co., in Benton Harbor, Mich. All are designed to deliver full capacity, full time. So naturally, Clark specifies dependable Bundyweld Tubing for vital hydraulic and fuel lines.

Agile tractor shovel with a 1¼-yard bite relies on lifelines of Bundy Tubing

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American Letter

Problems for Nixon and Kennedy

Neither of the American presidential candidates has found a clear road to victory next month. The indecisive performance of the special Congressional session—considering the Democratic majority—probably hurt the Democrats more than the Republicans. "Easy money" (page 15) has robbed Democrat John F. Kennedy of "high Republican interest rates" as a campaign issue. And to the disgust of many, Kennedy's Roman Catholic faith is an undercover issue, especially in rural areas.

But the shaky state of the economy may prove a problem for Vice President Richard Nixon, the Republican candidate. Many leading economists frankly contend the U. S. A. is already in a recession. (And it may take several months for easier credit and recently-increased government spending to stimulate business activity.)

The crucial area now appears to be farm policy. Resentment in the Middle West farm areas has long troubled the Republicans. But the Democrats have failed to find a solution to the farm problem. Some observers think farm sentiment is swinging back to the Republicans.

Though odds on the election fluctuate, a gambling man might just put his money on Nixon.

A new look in foreign policy

Major shifts are underway in U. S. foreign policy—forced by the march of world events, not by election politics. Changed tactics are dramatically apparent in regard to Latin America; but the underlying strategy applies equally well to Africa and Asia.

The State Department will depend more heavily on international organizations in the "inflammable" areas of the world. Reliance on the Organization of American States in the U. S. A.'s quarrel with Fidel Castro is one sign; reliance on the United Nations to aid the Congo is another.

There is a growing awareness in Washington that international organizations are politically more acceptable as dispensers of aid and as advisors. Some policy makers want to channel all African economic action through the U. N.; there is even talk of abandoning American bases there in an agreement with Russia to "neutralize" Africa militarily.

A greater effort will be made to identify more closely with the needs of "ordinary" people. This means more aid going into such things as housing, land reform, education. And it may mean leaning hard against local governments—and even U. S. businessmen on the scene—to speed needed social reforms. You already hear talk about U. S. pressure for more equable tax measures.

And the U. S. will try to display an ideological backbone while flexing its economic muscles. Risking charges of "meddling" in internal affairs, Washington will more forthrightly oppose undemocratic rulers. The Dominican Republic's Trujillo, who has never been unfriendly to the U. S., has already felt the sting of sanctions.

Details of the new American program will be left to the next administration. But Congress has authorized Latin American expenditures of $500-million (plus $100-million to aid Chile's reconstruction) as "a first step". More attention will be paid to commodity stabilization: Lead-zinc tariffs, for instance, may not be raised after all. And the United States will give stronger support to regional trading schemes in Latin America.

Kudos for coal

A new study of productivity by the Bureau of Labor Statistics reveals a remarkable performance by the U. S. bituminous coal industry. Between 1947 and 1959, while output was dropping about 35%, output per manhour almost doubled. **The reason:** An enlightened labor union permitted highly-efficient coal-cutting equipment to be introduced, and marginal mines to close.

Why do they invest abroad?

McGraw-Hill asked the largest American manufacturing companies: What is the single most important factor in your decision to invest in plant and equipment outside the U. S. A.? In almost every industry, the majority of managers stressed, as the deciding factor, **the need to open new markets.** Other factors—such as lower labor **costs, competition,** trade **restrictions,** even higher **profits**—were deemed a good deal less significant.

These market-minded Yankee manufacturers are right now planning larger expenditures abroad. For an idea of how much and where they will invest, turn the page.

Foreign Capital Spending by American Companies: 1959-61

(in millions of dollars)

INDUSTRY	CANADA Actual 1959	CANADA Planned 1960	CANADA Planned 1961	LATIN AMERICA Actual 1959	LATIN AMERICA Planned 1960	LATIN AMERICA Planned 1961	EUROPEAN ECONOMIC COMMUNITY Actual 1959	EUROPEAN ECONOMIC COMMUNITY Planned 1960	EUROPEAN ECONOMIC COMMUNITY Planned 1961
Primary Metals	$ 6.3	$ 15.5	$ 4.4	$ 86.7	$ 53.0	$ 73.7	$ 5.2	$ 5.7	$ 3.6
Machinery, Including Electrical	34.9	38.6	37.0	42.3	84.3	69.8	69.7	87.8	127.3
Transport Equipment Including Autos	32.3	23.3	24.8	25.8	33.6	37.2	53.9	98.2	99.3
Other Metalworking	14.3	9.0	10.1	5.4	4.6	9.7	8.2	7.5	8.0
Chemicals	68.8	71.5	68.6	40.1	37.0	48.6	15.3	54.2	91.4
Paper	27.9	28.8	29.0	0	.3	.6	0	0	0
Rubber	7.1	23.9	18.4	25.1	10.2	10.5	2.2	6.2	19.1
Stone, Clay & Glass	5.7	3.7	14.5	4.3	8.7	0	1.4	4.1	0
Food & Beverages	15.1	18.8	17.7	2.0	4.7	6.9	1.3	4.3	2.2
Misc. Manufacturing Including Textiles	7.8	10.6	8.2	1.9	1.2	.9	.1	1.2	4.6
ALL MANUFACTURING	220.2	243.7	232.7	233.6	237.6	257.9	157.3	269.2	355.5
Petroleum Industry	274.3	266.5	174.1	388.6	367.9	385.4	137.2	152.2	174.1

INDUSTRY	REST OF EUROPE Actual 1959	REST OF EUROPE Planned 1960	REST OF EUROPE Planned 1961	OTHER Actual 1959	OTHER Planned 1960	OTHER Planned 1961	TOTAL Actual 1959	TOTAL Planned 1960	TOTAL %Change 1959-60	TOTAL Planned 1961
Primary Metals	0	0	$ .9	$ 6.3	$ 7.3	$ 6.2	$ 104.5	$ 81.5	−22%	$ 88.8
Machinery, Including Electrical	74.7	91.3	119.2	27.4	49.1	57.5	249.0	351.1	41	410.8
Transport Equipment, Including Autos	77.6	75.0	121.0	25.8	28.4	27.9	215.4	258.5	20	310.2
Other Metalworking	3.8	3.8	6.2	0	.8	.7	31.7	25.7	−19	34.7
Chemicals	45.8	44.3	22.9	21.0	39.4	54.3	191.0	246.4	29	285.8
Paper	2.8	1.6	2.3	.3	.3	.3	31.0	31.0	0	32.2
Rubber	5.9	2.8	5.3	14.2	13.6	12.5	54.5	56.7	4	65.8
Stone, Clay & Glass	.9	.9	0	.6	.3	0	12.9	17.7	37	14.5
Food & Beverages	9.6	10.3	13.4	4.9	4.7	3.0	32.9	42.8	30	43.2
Misc. Manufacturing Including Textiles	.9	1.7	4.0	1.1	.4	.6	11.8	15.1	28	18.3
ALL MANUFACTURING	222.0	231.7	295.2	101.6	144.3	163.0	934.7	1,126.5	21	1,304.3
Petroleum Industry	137.2	152.2	149.2	205.7*	329.9*	360.5*	1,143.0	1,268.7	11	1,243.3

NOTE: Dollar figures reflect only expenditures of cooperating companies. These companies account for approximately 3/4 of annual overseas expenditures of all U.S. manufacturing and petroleum companies.

* Petroleum companies spent $125.7 Million of this total in the Middle East in 1959. They plan to spend $152.2 million in 1960 and $161.6 million of this total in the Middle East.

How Much They Will Spend—and Where

McGraw-Hill's Department of Economics has just completed its second survey of U.S. businessmen's plans for investment in new factories and equipment in other nations.

While the dollar totals above refer only to those companies that cooperate in the McGraw-Hill study, these companies account for about 75% of total U.S. manufacturing and petroleum investment abroad. The amounts above include both new capital from the U.S.A. and reinvested earnings from foreign operations. In 1958, reinvested earnings accounted for approximately 40% of total new investment abroad; in the record foreign investment year of 1957, reinvested earnings stood at 33%.

McGraw-Hill's study suggests that 1960 will set a new record for U.S. manufacturing investment overseas, that by 1961 manufacturing will for the first time account for a larger share of U.S. capital spending abroad than petroleum. This is another measure of the mighty movement of American companies into foreign production. And it is significant that manufacturers now tell McGraw-Hill that they are actually spending a good deal more this year than they planned to spend when last year's survey was made (IMD—Oct '59, p9).

Other highlights of the survey:

—Investment in Canada is slowing down;

—Latin American investment seems well-maintained, despite talk of U.S. businessmen reducing their outlays there (IMD—Sept, p1).

—The rush of Yankee investment to the EEC continues apace, moving well ahead of the rest of Europe.

—Increased spending in "Other" areas reflects growing U.S. interest in Asia (India, for one), Australasia, Japan.

World Affairs

More worry about money

There is continuing worry about the flow of "hot money" between countries. It is begging the question to explain the shifts by different interest rates. The real question is how to avoid damage to international finance while using interest rates as a regulator of domestic economics. No answer is in sight.

According to theory, the past few months' shifts in short-term money can be ignored because they are self-reversing. But bankers fear the problem won't go away even if the spread in interest rates narrows. They worry about:

Whispers that the U. S. gold loss was getting dangerously large (or might become so), or that Germany must after all revalue the D-mark, could convert the flow to a violent torrent.

Accumulation of such large reserves in Germany creates a new "Fort Knox" problem of shrinking liquidity, damaging to world trade.

Healing the split

About the prospect of a reconciliation between Europe's rival trade blocs: Greater rapport between Germany and Britain now points to a merger, with a customs union linking EEC with the Outer Seven.

This development reflects a changed political mood in London and Bonn; they appear to have concluded that the failure of summit diplomacy, the more threatening Soviet and Chinese attitudes, and the uncertainty about next year's U. S. leadership, makes any dissension in Europe the more dangerous. (President de Gaulle agrees, but he's far from sure about a customs union yet.)

U. S. officials appeared slightly dazed by the change implicit in the August talks between London and Bonn. The State Department has consistently opposed an EEC-EFTA merger, feeling it would threaten even more discrimination against American goods.

But Washington is taking another look now. It cannot object to a customs union if it meets GATT requirements. Also, a substantial measure of discrimination against U. S. goods is inevitable anyway since both blocs eventually plan to abolish their internal trade barriers—whether or not they merge into a larger, all-European system.

Washington realizes that, long-run, a wider market and more efficient production in Europe should encourage more rapid and stable economic growth, more than compensating for any increase in trade discrimination.

From the U. S. point of view, a slow move towards a merger—that would not weaken NATO and reverse the tide towards political integration of the Six—would be an acceptable price to pay. But count on the Americans using every bit of influence they can muster to keep the trade barriers low.

Sweet trade talk

The Russians are showing no signs that they intend to let their political quarrels with the West interfere with the sweet words of their trade officials.

Look at the new list of Soviet chemical and equipment orders placed in Western countries. It underscores Moscow's drive to woo trade, and provide the Russian economy with the latest technological processes. You get some idea of Soviet success from the exposition put on in Moscow by Britain's Imperial Chemical Industries and the recent Japanese industrial fair. A Dutch show is planned, too.

Deliveries: U.S. lead shrinks

European and Japanese makers of heavy machinery, electrical gear, and the like are narrowing the gap between order and delivery. Soon they may be competitive with the Americans in delivery time. But now, U. S. suppliers are delivering in, say, three months where competitors often take seven.

That is a gist of a Chemical Week report last month. New steel and machinery-making capacity has helped: Delivery of European and Japanese valves, pumps, tanks and towers, heat exchangers, switchgear, structural steel, etc., has speeded up markedly. And look for further improvement, stimulated by EEC integration and world competition. In a few years buyers will easily cross borders to find fast delivery when they need it.

But habits die hard. For some items, limited stocks—not capacity—is the problem. Europeans hesitate to tie up capital in inventory, even for standard products, without first getting the order. Meanwhile buyers find that by using "expediters" and premium payments, and by cultivating friendships, they can speed delivery. (This is more true on the Continent, less so in the U. K.)

turn the page

Letter from Helsinki:

Prior to World War I, Finland's famed distance runner, Hannes Kolehmainen, literally ran his country onto the map of the world. The map has changed considerably since then. But until recently, the Finns have not bothered much about telling their story to the world—and especially to the business world.

Now the Finns are coming out of their Nordic hibernation. They are excited about the growing diversification of their economy; they are proudly pointing to new export successes in Western markets. You could see a changed Finland at last month's Finnish Industries Fair, in Helsinki. One-third of the space was reserved—not for the traditional forest industries—but for the metalworking industries. (Finlands' wood, pulp, paper, and board still add up to nearly 80% of total exports, and when bad times hit the forests, the whole nation suffers.)

Look at the progress in metalworking. Capacity has been expanding at a healthy 7% annually, providing today 17% of total exports. Mining, too, is assuming greater importance (note the new undersea iron mine off the southern coast, to be producing 300,000 tons of ore by 1962; a joint Finnish-Swedish venture will process the ore). Nor is the forest industry standing still—it is in the midst of a $340-million expansion, to be completed in 1962.

Growing production—in a nation of only 4.4-million—is making the Finns export-hungry. And they are getting results by following two business principles and an unusual marketing effort.

The first principle lies in specialization. The Finnish metalworking industry concentrates on offering paper and sawmilling machines, cables, electric motors, transformers, icebreakers and refrigerator ships, and materials-handling and earth-moving equipment. (Finns believe their rugged terrain has inspired some especially well-engineered heavy equipment.)

How successful? Kone of Finland supplies 50% of Sweden's harbor cranes. Valmet is building a tractor works in Brazil.

The second principle is to concentrate on the potentially good markets, in the industrial and semi-industrial nations, not so much the under-developed lands (the Finns have real difficulty granting extended credit terms). In the process, Finland is breaking its trade dependence on the Russians. For one thing, the Finns are tired of the caprice of the "purchasing agents" in the Kremlin; for another, they are meeting much stiffer competition from other Westerners in the Communist market. One big Finnish company, which once sold 60% of its exports behind the Iron Curtain, now reports the total is only 7%. By 1965, Finns believe that 50% of their metalworking exports will go West, compared to 35% now.

To market its machinery exports, the Finns set up Metex Corp., a private company linking 42 member firms with 87 factories and an annual turnover of $250-million. The roving salesmen of Metex have made contacts in about 100 foreign markets, and won contracts to build factories or supply major machinery components in 23 nations, from India to South America.

The Finns also hope their European trade may improve, now that Mr. Khrushchev has given his tentative blessing to Finnish membership in the European Free Trade Assn. The price: a guaranty providing the Russians with the same trade privileges that the Finns would grant to EFTA members. Next month, President Kekkonen will journey to Moscow to start negotiations.

Industrial materials prices

Barring a major international crisis, British economists anticipate only a moderate firming of world commodity prices over the next few months, with production matching rising world consumption. U. S. observers see steady, possibly higher, industrial materials prices—provided business activity slowly picks up as expected. But deflationary forces in the economy will limit any rise in industrial materials prices to about ½% through December. The outlook:

Chemicals: There is a strong possibility of price rise for U. S. benzene and naphthalene because of the tight supply in these products.

Plywood: Drastic production cutbacks have arrested declining prices. Even a moderate rise in demand could result in higher prices for profit-squeezed producers.

Iron and steel products: Industry profits have been pinched by low operating rates. And steel companies will be under greater pressure when wage increases go into effect December 1. Odds are there will be some list price increases; whether they will be selective or across-the board depends on the business situation from now on.

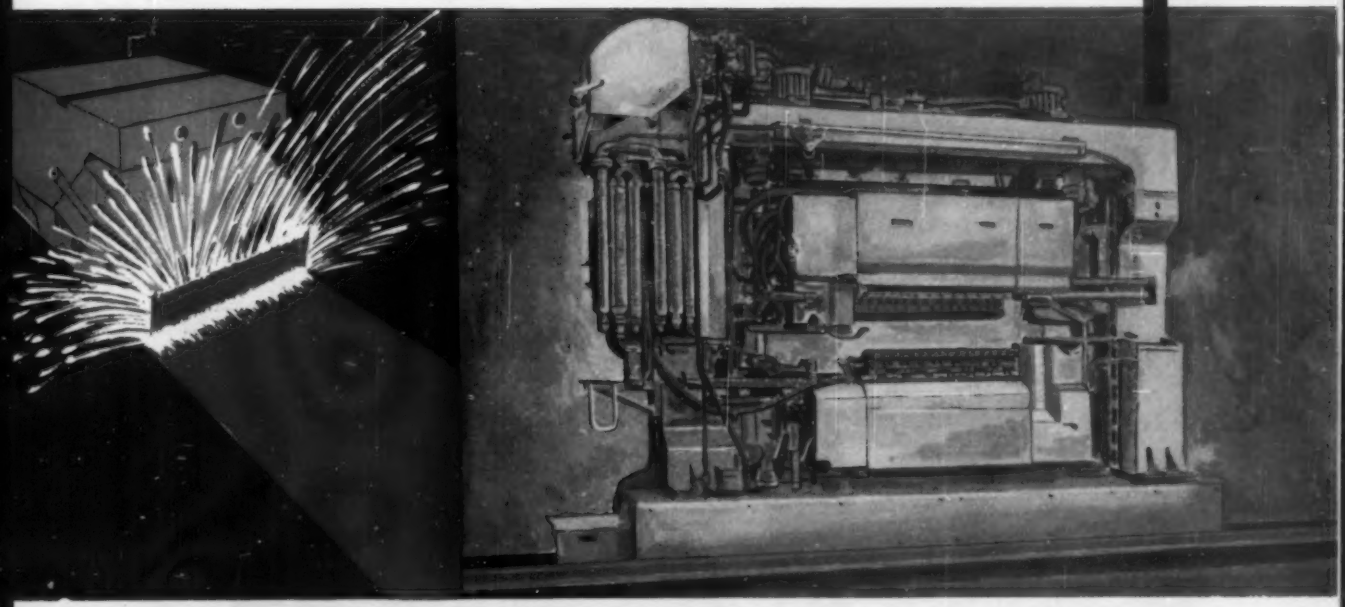
Aluminum: Prices should firm up (the recent cut in electrical conduit prices is an isolated move). Inventories in the U. S. A. have been pared; and a business pickup there may stop list price shading.

Copper: Unless there is a complete breakdown in Katanga's production —virtually normal up to now— prices will remain at present level or even decline slightly.

Lead and zinc: Even if the U. S. economy improves, a recovery in lead prices will be retarded by stocks overhanging the market. Basic trouble is that lead faces stronger competition from other metals and plastics. U. S. consumption of zinc may still fail to reach the 1955 peak since the automotive industry has not proved an expanding market for zinc die-castings.

Volume 15, Number 10 of INTERNATIONAL MANAGEMENT DIGEST, published monthly by McGraw-Hill International Corp., 330 West 42nd Street, New York 36, N. Y., U.S.A. Subscriptions solicited only from management executives in business and industry. Subscription price $5 (U.S.) for one year. Publication office: 99-129 North Broadway, Albany 1, New York. Second class postage paid at Albany, New York. INTERNATIONAL MANAGEMENT DIGEST and AMERICAN LETTER copyright© 1960.

Beauty treatment for steel



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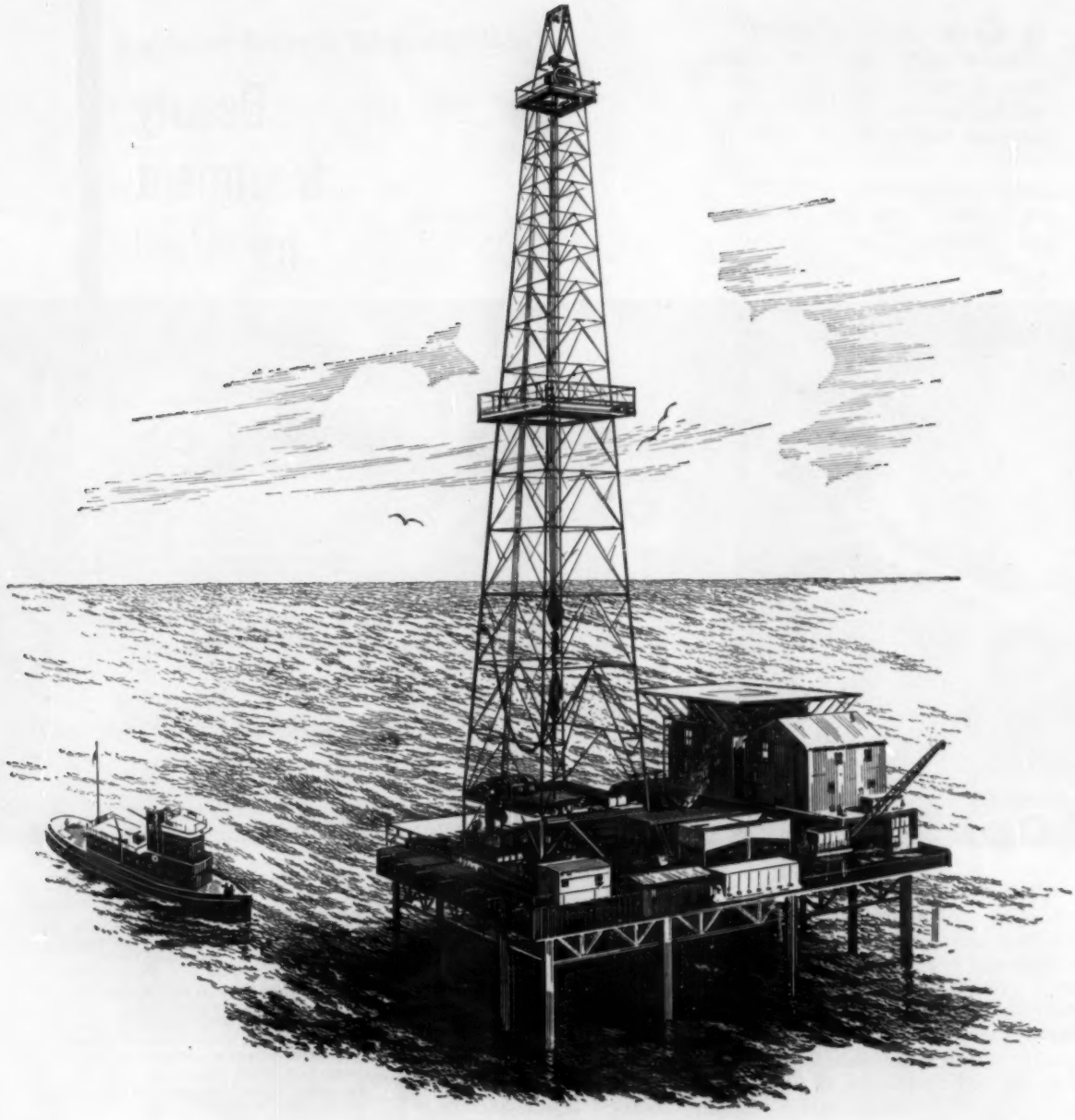

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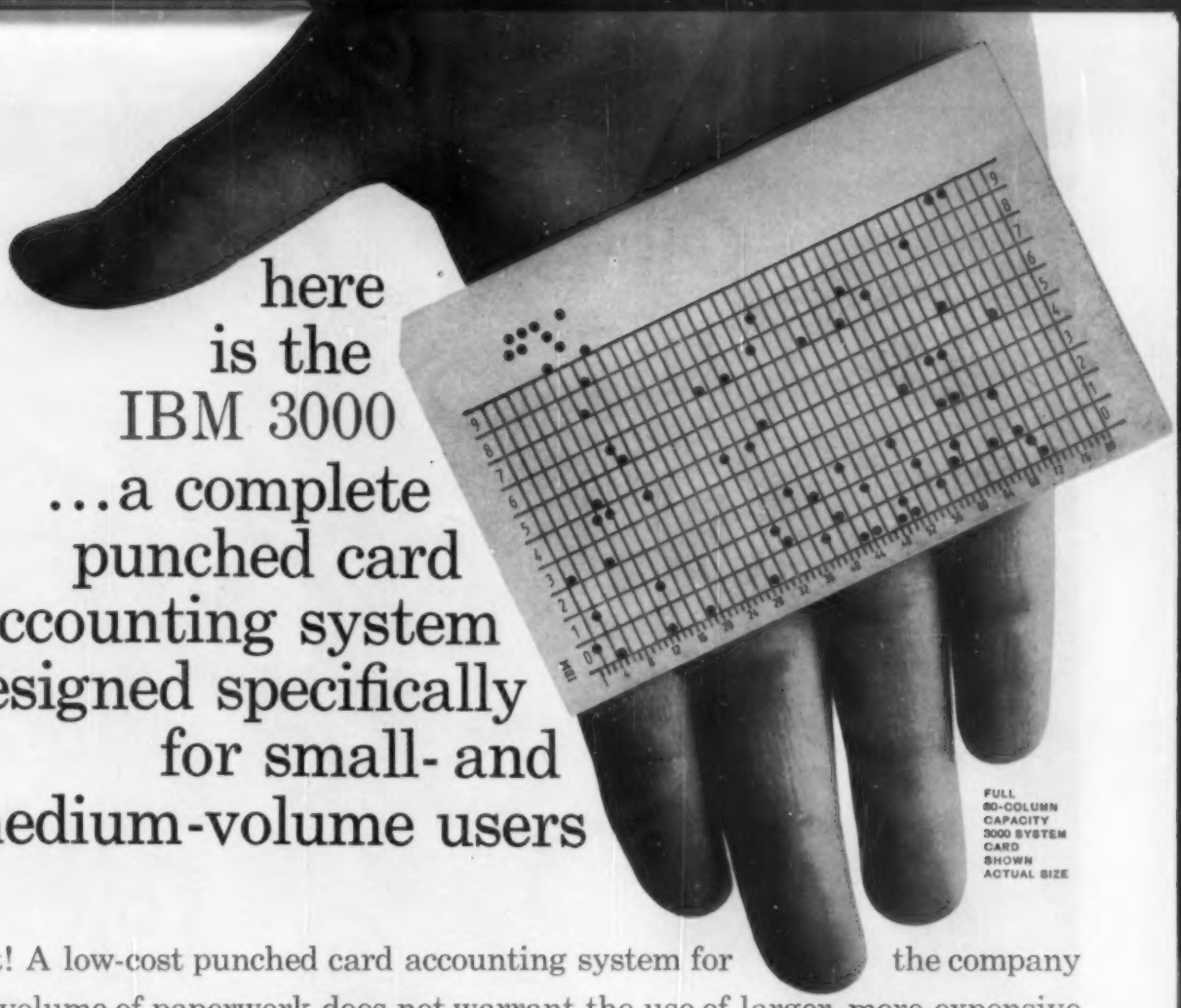

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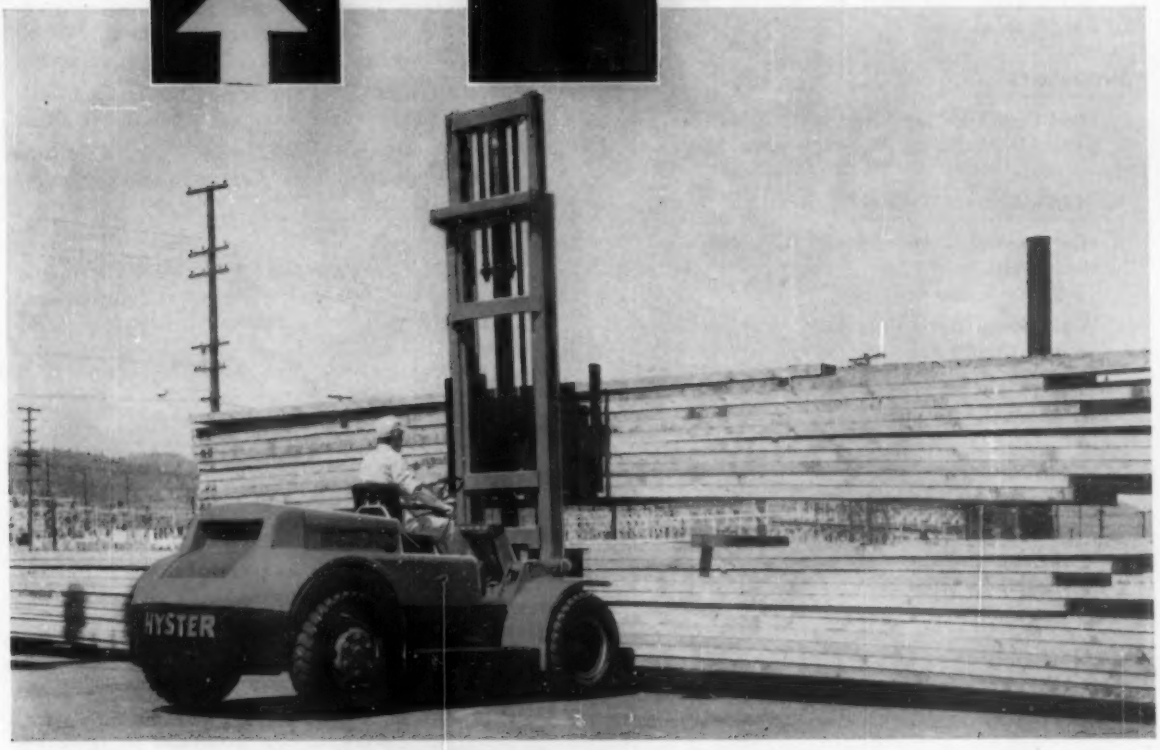

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OCTOBER 1960

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PICTURE CREDIT: Aliquippa (Pa.) Works, Jones & Laughlin Steel Corp. —cover.

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INTERNATIONAL MANAGEMENT DIGEST (formerly McGraw-Hill DIGEST) Overseas and Latin American Editions is published monthly by McGraw-Hill International Corporation, James H. McGraw (1860-1948) Founder. Circulation in all countries of the world.

Executive, editorial, advertising and circulation offices: 330 West 42nd Street, New York 36, N. Y., U. S. A. Donald C. McGraw, Chairman of the Board; Nelson L. Bond, President; Joseph A. Gerardi, Hugh J. Kelly, Harry L. Waddell, Executive Vice Presidents; L. Keith Goodrich, Vice-President and Treasurer; John J. Cooke, Secretary; John R. Callaham, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator.

Publication Office 99-129 North Broadway, Albany 1, N. Y., U. S. A. See panel below for directions regarding subscriptions or change of address.

Subscriptions may be ordered through Fulfillment Manager (See Below). Subscriptions to INTERNATIONAL MANAGEMENT DIGEST are solicited only from management men in business and industry. Subscription orders must indicate position and company name. Subscription rates: $5.00 for 1 year, $10.00 for 3 years to all countries except U. S. & Canada. $20.00 for 1 year to U. S., U. S. possessions and Canada. Single copies $1.00. Second class postage paid at Albany, N. Y. Printed in U.S.A.

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Send Subscription correspondence and change of address to Fulfillment Manager, INTERNATIONAL MANAGEMENT DIGEST, 330 West 42nd Street, New York 36, N. Y., U.S.A. For change of address please mail your complete new address as well as stripping of the old envelope showing your old address.

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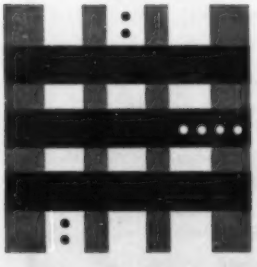

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READERS' REPORT

Letter from Robeco

Sir . . . You are to be congratulated for spreading understanding of mutual funds (IMD-July). You are correct in stating that our Rotterdamsch Beleggingsconsortium N.V. (Rotterdam Investment Consortium) is "'open ended' in that it issues new shares at net asset value . . . 'closed-ended' in that it does not redeem shares."

We would add that Robeco shares are distributed primarily through the Amsterdam stock exchange, where they are one of the five most active listings. As a matter of policy, we stand ready to purchase any excess of supply over demand.

Dr. E. A. Brouwer
D. E. Van Raalte
Managing Directors

Rotterdamsch Beleggingsconsortium N.V.
Rotterdam, Holland

"Made-in-Brazil"

Sir . . . We read with great interest your July article "Made-in-Brazil: A New Competitor in Latin America?"

Indeed, the effort made by Brazilian industries to export manufactured goods is worth mentioning. We are proud to state that we also participate in this effort, and the many difficulties we face are well stated in your article. In spite of these, and with the "Paulista" spirit that is well known everywhere, we believe that sooner or later "Made-in-Brazil" will be found all over the world.

Besides wishing to present our compliments for your magazine in general and for the article mentioned in particular, we wish to inform you that one other product manufactured in Brazil is slowly but steadily gaining international recognition. It is the kerosene-operated Gelomatic refrigerator, which we manufacture (among many other products). It is with pleasure that we state that several countries in Latin America and Africa have shown their enthusiasm for our product. Owing to the large areas still without electricity, Brazil is one of the few industralized countries that has a great consumption and, consequently, a large production of kerosene-operated refrigerators, and so can afford to produce them with the most modern techniques.

G. P. Meyer

IBESA
Sao Paulo, Brazil

Sir . . . With reference to "Made-in-Brazil—A New Competitor in Latin America?," we would like to remark that products of our firm (the biggest producer of hardboard in Latin America) were not included among the exports of Brazil to the United States and other countries.

For your guidance, we give you our exports of hardboard over the past three years to the U.S.A. and other Western Hemisphere markets: 1958—$56,082.60; 1959—$160,829.91; and the first half of 1960—$127,022.85.

Managing Director

Duratex S.A.
Sao Paulo, Brazil

Practical Scot

Sir . . . I read with interest the item about the Arthur D. Little engineering firm, "600 Brains for Hire" (IMD-Aug, p 17). As a Scottish engineer with a Scottish company situated in Scotland, the final sentence—"first overseas facility is an advanced research laboratory in Scotland far away from our practical-minded clients"—was of particular interest. I am quite sure that even in far away little Scotland General Gavin will find some practical-minded clients.

J. McLean

Motherwell Bridge & Eng. Co.
Motherwell, Scotland

Talk about Gold

Sir . . . During the past 18 months there has been a tremendous amount of talk in South Africa of the dollar being de-valued in terms of gold. Since receiving INTERNATIONAL MANAGEMENT DIGEST for June, July, and August I have looked for some indication in regard to this matter and the only one I have is in the July "American Letter" saying "for all the talk of weakness, the U.S. dollar is harder than it has been for some time."

It would be appreciated if you could give me some indication of what American opinion is in regard to this matter, as the stupendous loss in gold reserves seems to support the South African opinion that devaluation is only a matter of time.

W. H. Collins
Director

A. L. Collins & Co.
Johannesburg, South Africa

● While thoughtful Americans are deeply concerned about this problem they hardly think of the gold drain as "stupendous"; indeed, it has been considered quite manageable so far. And American opinion is firmly set against devaluation—on grounds that it would create more problems for the U.S.A., as well as for world trade generally, than it could possibly solve. INTERNATIONAL MANAGEMENT has discussed the matter several times in the past 18 months (see July'60,p8) and touches on it again in a leading article this month (see page 15).—EDITOR

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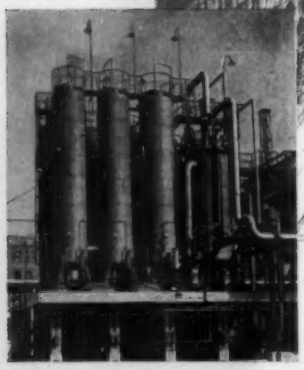

Modern Nitric Acid Plant

Wittenberg 1915

1915 - an eventful year

45 years ago new eras were dawning throughout the world; in the vast expanse of technology especially, exciting new frontiers were being explored. In radio, practical techniques had advanced far enough for speech transmitted from Arlington, U.S.A. to be heard across the Atlantic in Paris, the development of vanadium steel marked a great forward stride in metallurgy; and in Germany the first quantities of Buna — a synthetic rubber — were produced. That same year Wilhelm Ostwald, the great German chemist who received the Nobel Price in 1909, discovered that nitric oxide could be formed by oxidizing ammonia and thus laid the theoretical foundation for the economic manufacture of nitric acid.

As a result, nitric acid acquired increasing importance as a raw material for nitrogen fertilizers, explosives, plastics, lacquers and dyes among many other products.

PINTSCH BAMAG A.G. — then still named BAMAG — planned and erected in Piesteritz, near the city of Wittenberg, important projects for the production of nitrogen fertilizers — plants for making ammonia gas, for the oxidation of ammonia, for ammonium sulphate and nitrate, and later a plant employing an exclusive process for calcium ammonium nitrate.

New methods were tried out in collaboration with nitrogen processors. In 1925, for instance, BAMAG built a large-scale pilot plant for high-concentration nitric acid and developed the water-film converter in which nitrous gases of sufficient strength are generated as to permit the d i r e c t manufacture of high-concentration nitric acid.

Five years later, in 1930, the BAMAG chemist Thomas Fischer developed the process for oxidizing ammonia with atmospheric air, with subsequent oxidation of the nitrous gases thus obtained to high-strength nitric acid. Consumption of costly oxygen is slashed to a sixth in this entirely new method, which to the present day has lost none of its significance.

PINTSCH BAMAG has remained closely associated with the nitrogen fertilizers industry since the two first came in touch in that eventful year of 1915. The company has had a major share in the construction of modern high-capacity plants now in service or nearing completion in several European and overseas countries.

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The American economy needs a "lift"—and that seems more important now than worrying about the U. S. gold position. So the authorities decided to take a . . .

Risk Abroad for a Gain at Home

THE FEDERAL RESERVE, the U.S.A.'s central bank, has decided to "go it alone." At a time when other major trading nations are pursuing policies of tight credit and high interest rates, the U.S.A. has opted for easy money.

Many have said this couldn't be done—at least not without grave consequences to the standing of the United States dollar on the world exchanges. Despite an improvement this year, the U.S. still is running a substantial deficit in its international accounts. It is still losing gold as other nations, building their reserves, exchange incoming dollars for metal.

• **Pump-priming**—Yet in the face of this, the American monetary authorities have been for some months pumping additional money into the economy, and have cut central bank rediscount rates—to 3½% in June, to 3% in August—to a point where the spread between yields in the U.S. money market and those in Europe has swollen to dramatic proportions. (In Germany, the prime lending rate to business borrowers is around 8%; in Britain, 6½%; in Italy and France from 7% to 7½%—compared to 4½% in New York.)

The result is a delicate situation. The danger is that a rush of money from the U.S. to higher yields in Europe could touch off a flight from the dollar into gold. This would force drastic emergency measures. At the very worst, it could conceivably mean a devaluation of the dollar.

• **Gain at Home**—Most experts expect nothing of the kind. The decision of the Federal Reserve is that the needs of the domestic economy must, for the time at least, take precedence over the gold position. *Business Week* explained the situation this way:

The economy needs a pick-up. It is operating well below capacity; unemployment remains consistently above 5% of the work force. Business' capital spending shows some signs of slowing and consumers are hardly buying at a boom rate.

• **Skeptics** — The monetary authorities were skeptical of the early-1960 forecasts of booming business. As early as March they began moving to easier credit.

The pessimists are convinced that a recession may be already in process in the U.S.A. But Federal Reserve officials expect a mild autumn business improvement. Their aim has been to encourage it by seeing that there is plenty of credit at reasonable rates. Because there is ample industrial capacity, because inflationary pressures seem minimal, the Federal Reserve decided to move in early with credit ease before there is any major change in the outlook.

• **Risk Abroad**—As of early September, the U.S. had lost over $450-million from its gold reserves this year, most of it since June. Federal Reserve officials expect some further drain. But they count on foreign central banks, which will be increasing their dollar assets as a result of the recent outflow of short-term money from the U.S., to be very restrained.

• **Panic?**—There is always the bare chance that some central bank will panic, and move the bulk of its balances into gold. This could touch off a run on the U.S. Treasury's stocks. But neither Washington nor European central bankers think this could happen unless it became clear that the U.S. was embarking on a wildly inflationary course. They see little danger now of a crisis of confidence over the dollar.

The real danger, some overseas bankers say privately, might come after the presidential election. They trust the present leaders of the Federal Reserve System as true believers in sound money. If there is a retreat from these concepts under a new Administration, they admit of the possibility of a run on gold.

In a sense, the fate of the U.S. gold supply rests with a handful of central banks in Europe. Dollar switches by individuals, companies, and private banks exert only indirect pressure on U.S. gold. As West Germany, Switzerland, or Britain receives a big inflow of funds, their central bankers can choose whether to increase gold purchases or whether to hold the dollars they receive.

• **Stake** — This year they have been posting high interest rates mainly as a result of booming conditions at home, not to attract "hot money" from abroad. And in any case, they all have a huge stake in the U.S. dollar, which they hold in quantity as reserve against their own currency.

The non-Communist world's stake in the dollar is what the Americans are counting on. They believe the large U.S. gold stock can stand a further temporary decline. And they deny vigorously that there is any "gentleman's agreement" among central bankers to give the dollar preferred treatment. To even suggest such an agreement, says a Federal Reserve official, would prompt a gold rush rather than restrain it. He adds: "The reason foreign central banks are behaving as they are is that any other course would be disastrous for us all." ●

Depressed slums can become clean, bright, if businessmen join city planners in fighting urban blight. Problem is worldwide, growing more serious, and it is essential that . . .

Businessmen Organize to

IN PITTSBURGH, workmen are putting the finishing touches on the "Golden Triangle," a complex of modern buildings and parks to replace a vast slum area at the city's center. In London, there is excitement about the "Barbican Project" which will include housing, shops, schools, offices in a unified scheme with multilevel separation of pedestrian and vehicular traffic. In Tokyo, there is a dramatic scheme to fill in half of the bay and turn it into a new city. In Mexico City, the government is forcing the growth of new residential and industrial centers outside of the hard-pressed Federal District. In Paris, too, the government is urging industry to move out to the provinces.

These are the kind of projects required to revitalize big cities, a challenge to government officials and businessmen everywhere. It is an issue in next month's U. S. presidential election, with both political parties urging more government spending on city housing, transportation, urban "renewal." And the U.S.A.'s Committee For Economic Development (CED), a private organization of thoughtful businessmen and educators, has just issued a clarion call to businessmen to participate more actively in the solution of urban problems. Says CED: "The economic frontiers of America are in the metropolitan areas."

The very bases of their business in some cities is eroding; real estate values are falling, downtown business areas are attracting fewer employees and shoppers. Further degeneration of the central city means that corporations will have to pay higher taxes to make up growing deficits in transit, police protection, education and other city services. And the political problems that fester in a decaying city make for a decidedly unhealthy atmosphere for business.

I. Concentric Rings

Think of the urban problem as a set of concentric rings, with the "hub" at the center.

One of the main causes of the hub's degeneration is the growing use (or misuse) of the automobile for mass transportation. An unending stream of cars is supplanting the rail systems, creating impenetrable traffic jams. It is now more time-consuming to cross the hub than was the case 50 years ago, despite technological improvements in transit facilities. One traffic expert in New York illustrates the problem this way: "In 1906, the average speed of a horse-drawn carriage traveling through the streets of New York was 13 kilometers an hour. Today, the average speed of a car through the same streets is 10 kilometers an hour."

But the prospects for the hub are far from dismal, according to many city planners. They maintain that the hub can be an area of strong economic growth if businessmen donate their time and skills to its problems. The hub must specialize in functions requiring the interchange of ideas as its prime service.

• **Depressed Area** — The "core," surrounding the hub, presents the greatest challenge to businessmen. The economic picture emerging is one of spreading deterioration and decline. Unlike the hub, it cannot redevelop by itself, it needs the massive intervention of public funds and the skills of business. It is the area of oldest housing, schools, shopping facilities. It is the belt of slums, "gray" areas.

The "inner ring," where the suburban areas begin, poses less urgent problems. Its population will rise, to be sure, but its economic growth is assured during the next decade. Empty tracts of land will be blanketed with moderate-to-low density housing, new shopping centers, and industrial establishments. Later, undoubtedly, the inner ring will need help when rapid population growth brings pressure for new apartment, parking, transit facilities.

It is the outer ring of suburbs, in the metropolitan region, that will be the area of most rapid economic growth, will need the least help from business. It will be the area easiest to plan communities as integrated units and minimize the traffic and other frictions that plague the older city patterns.

II. When Businessmen Act

All these problems and prospects require businessmen to take a flexible approach to urban renewal. There are few hard and fast rules. If businessmen decide to set up an

Fight Urban Decay

organization to combat urban rot, its form should be determined by the problems at hand.

One approach that shows promise is the Greater Boston Economic Study Committee, associated with CED. This committee has fourteen top representatives of commercial and industrial interests in Boston's metropolitan area, a newspaper editor and the dean of a school of business administration. One of its first tasks was an economic study of downtown Boston which demonstrates the prohibitive effect of local property taxes in that city on office building construction.

• **In the U.S.A.**—This businessmen's organization, and others in the U.S.A., have made significant recommendations in urban renewal planning. If they appear to be more advanced than others overseas, it is largely because as Americans they have lived with automotive congestion much longer.

Take the work of Rochester's businessmen, for example. Retailers there felt that downtown business was deteriorating. So they called in Victor Gruen, noted architect and city planner, to discuss their needs. The result: the "Midtown Plaza" now under construction.

This project is a fusion of existing structures and new ones. It will be an air-conditioned, landscaped shopping center on a two-story mall, with parking space for 2,000 cars underground.

Philadelphia's city fathers also are tackling urban renewal problems. Indeed, one of their planned projects—one of the U.S.A.'s largest—involves the renewal of the depressed Eastwick area at an estimated cost of $350-million. The project will separate people and automobiles as much as possible by means of a traffic system that provides for a few through streets, access roads, and no-traffic residential streets.

• **Rapid Transit** — Meanwhile, one of the most elaborate plans to get the commuters out of their cars and into mass transit systems is shaping up in San Francisco. Next month, voters will be asked to approve a bond issue to finance an immense system of rail transportation facilities, estimated to cost from $500-million to $700-million. If approved, planners hope to have trains running on a 201-kilometer high-speed network by 1965. Meanwhile, monorail transportation, often offered as a panacea for transit ills, will get a tryout in Seattle (state of Washington) in 1962.

Chicago is placing heavy emphasis on expressways to solve its traffic problems. One of its vehicular arteries has the first major rapid transit rail line to be built in conjunction with an auto expressway. This approach, which has attracted worldwide attention, greatly increases passenger carrying capacity of the right-of-way without greatly increasing the cost.

New York's Downtown-Lower Manhattan Association of businessmen has proposed a bold plan for redeveloping a large stretch of land on the fringes of the city's financial center, and is expected to obtain a good deal of cooperation from the city government. In addition, New York has come up with a sweeping rezoning scheme expected to be approved by the Board of Estimate by the end of the year.

• **Overseas** — Outside of the U.S.A., the businessmen are more apt to leave the problems of the city to local and national government.

The British Government stoutly maintains its "greenbelts" around cities and towns in an attempt to check disorganized sprawl. Another program, and considered to be Britain's most imaginative scheme in the postwar period, is the "new towns" idea—the creation of whole new planned communities to siphon off population and industry from congested "conurbations." Though this plan did prevent London's problem from getting even worse, it has not gotten to the roots of urban decay. Previously apathetic, British businessmen are now beginning to participate more in urban planning (the two-year-old Society For Promotion of Urban Renewal—SPUR—is an example).

In France, the main urban effort is centered in Paris. And recently, Parisian businessmen have begun to take an interest in the problem. Through their trade associations, they have built an impressive new exhibition hall in Puteaux, outside of Paris. The hall, which opened last year, will eventually house all the big trade shows such as the Automobile Salon. The area may become a new business center that will relieve much of the congestion from downtown Paris. The government remains determined to get non-essential industries to relocate in the provinces, but up to now, workers are reluctant to migrate with their companies.

• **Little Progress**—Germany is a surprise. With many of its cities razed during World War II, town and city planners were presented with an opportunity to start fresh in modern urban planning. Yet responsible authorities slipped back into the well-trodden rut with only one notable exception—the exhibition city of Hannover.

Business shows little inclination to do anything at all. And, in the opinion of some observers, the problem may well become catastrophic,

Pittsburgh's hub before . . .

. . . and after replanning.

How A City Met A Challenge

THE Pittsburgh renaissance, as reported in *Business Responsibility in Action*, published by McGraw-Hill in 1960, is an outstanding example of business leadership to come out of postwar America.

It is more than a story of dramatic accomplishments in transit, smoke control, housing. It is a story of a series of frustrations and triumphs as businessmen successfully combined forces with political leaders to work great changes.

Essentially, Pittsburgh—the center of the U. S. steel industry—emerged from the crash production drive of the war in much the same shape as many other of the U. S. A.'s huge urban centers. It was tired. It was smoky (lights even had to be left burning at midday). Housing was poor. No major expressway had been built and none was in design. Steel leaders, moreover, were pessimistic about Pittsburgh's prospects. And many corporations that had long made their headquarters in the city were considering moving out.

Then an amazing thing happened—an event that occurs only once in generations of a community's history. A group of younger men and new leaders came into positions of executive responsibility in Pittsburgh's industrial life. This group, under the prodding of Richard K. Mellon, quickly evaluated their city's plight, and formed the Allegheny Conference on Community Development. This conference was expressly designed to supply the muscle to implement the ideas developed by the city's Regional Planning Association.

Business membership was carefully culled from the top; no firm was allowed to be represented by lower echelon officers. This approach, the conference decided, would give their movement prestige.

The decision paid off, especially when the conference wanted company backing for specific projects. The conference also was able to get thousands of participants at various levels, from enthusiastic support to actual working responsibilities.

Equally important, close liaison was established with Pittsburgh's city government. This was accomplished even though the business leadership was strongly Republican, the city administration Democratic. The key to success was keeping its program nonpartisan.

The first problem was smoke control. Once this could be beaten, the conference believed it would be off to a good start, and the city would be more willing to support other ventures. And in an uphill battle, the smoke was cut between 85% and 90%. Pittsburgh got a new lease on life: real estate values climbed, building of new highways, bridges, slum clearance accelerated.

The smoke control story was duplicated in the "Golden Triangle," the economic heart of the Pittsburgh region. But it was obviously not enough to alter the center of the city alone. The surrounding area must be replanned at the same time. Accordingly, part of the planning work was given to metropolitan government—in the case of Pittsburgh, the country administration. Transit problems were one instance. And this regional approach overcame the fear of the little communities around Pittsburgh of being absorbed into the city.

The job is not yet done, Pittsburgh's businessmen emphasize. Corporations along with city officials will keep the program going on a regular, continuing basis. They are convinced that despite delays their methods work, and can be used successfully elsewhere.

as German auto ownership soars.

Tokyo claims to be the largest city in the world, with more problems (and less likely solutions) than most of the other huge cities. Earthquakes plague construction of new office buildings. Condemnation of private property to build adequate highways is difficult, if not impossible, largely because of the tremendous land shortage and the antiquated legal system.

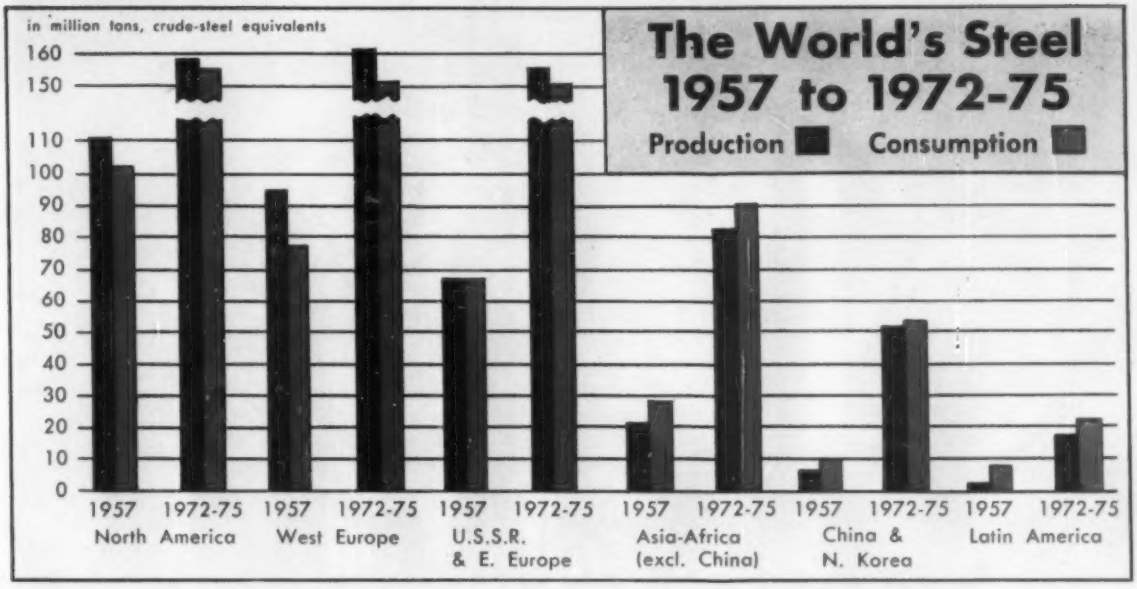
Still, Tokyo believes it has the best city planning organization in the world, with many blueprints on paper. And the city's plan to fill in half of the bay to provide more urban room is not as impractical as it first sounds. This has been gradually happening, by natural causes, for more than a hundred years. Much of the downtown center of the city today—its famous Ginza—stands on land that was under water less than 200 years ago.

Also, Tokyo's neighboring prefecture, Chiba, is proposing to borrow as much as $50-million from a syndicate of U. S. firms to fill in its coastline as a new factory area.

• **Brazil, Too** — Latin American cities also are suffering from urban blight. Though its resources to cope with the problem are limited, there are some signs of progress. In Brazil, for example, the sprawling industrial city of Sao Paulo is pushing decentralization of industry. New companies already have set up shop in industrial satellites like Sao Jose dos Campos, Sao Bernardo, Santo Andre 24 to 48 kilometers away. The move has even gone as far as Campinas, the coffee town, 97 kilometers from Sao Paulo.

Meanwhile, in Rio de Janeiro, a semi-autonomous agency called SURSAN—Superintendency of Urbanization and Sanitation—was set up, with funds from the city sales and consignment tax. Traffic is an especially painful difficulty, and here SURSAN has done well.

One of the biggest problems was the vast expansion of the Brazilian government bureaucracy, headquartered in Rio. So the Brazilians have picked up their capital bodily and are moving it deep into the interior of the nation. The sparkling new city of Brasilia is an exotic—and expensive—way to solve urban problems. The example of Pittsburgh (at left) is less romantic, but very effective.



Steel Gets Fighting Mad

A U. S. RAILROAD recently ordered 1,200 hopper wagons made of aluminum. Prestressed concrete is gaining in the construction field. Steel nails are giving way to adhesives, tin cans to plastic containers.

All this means a challenge to steel. But there are other challenges —overseas competition, the trend toward compact machinery, new patterns of distribution, and—in the U. S. especially—yawning excess capacity.

• **Battle** — But the industry is fighting back. New techniques are doubling the output of blast furnaces and cutting the cost of steelmaking. New steel products are on their way. Steel is rejuvenating its advertising and selling and talking of better, cheaper, more competitive steel. And plant capacity is growing everywhere.

Take a look at the charts above. According to estimates by the United Nations Economic Commission for Europe, the world will be producing 630-million tons of crude steel in 12 to 15 years. That is more than double the 302-million tons produced last year.

And the comparative output of different regions of the world will change. The U. S. no longer will be producing more than a third of the world's steel, as it does today. West Europe will have edged ahead, producing 161.2-million tons of crude steel, compared to the U.S.A.'s 159.5-million. Significantly, West Europe will have the largest exportable surplus: 9.2-million tons, compared to the U.S.A.'s 1.7-million, the Soviet bloc's 4.4-million.

Production will increase substantially in the rest of the world —in Asia, Africa, Latin America— but these regions will still be net importers. Australia is expected to change from an importer to an exporter, but its surplus will be more than offset by the mounting demands of India, Indonesia, and other Far East-Asian countries.

I. The U.S. Problem

These long-range trends, though they affect all countries, are not the biggest concern of the U. S. industry. Nor have the inroads of substitute materials kept steelmen awake nights. American steel output dropped far below capacity in recent months because of two other problems—one short range, the other extending into the future.

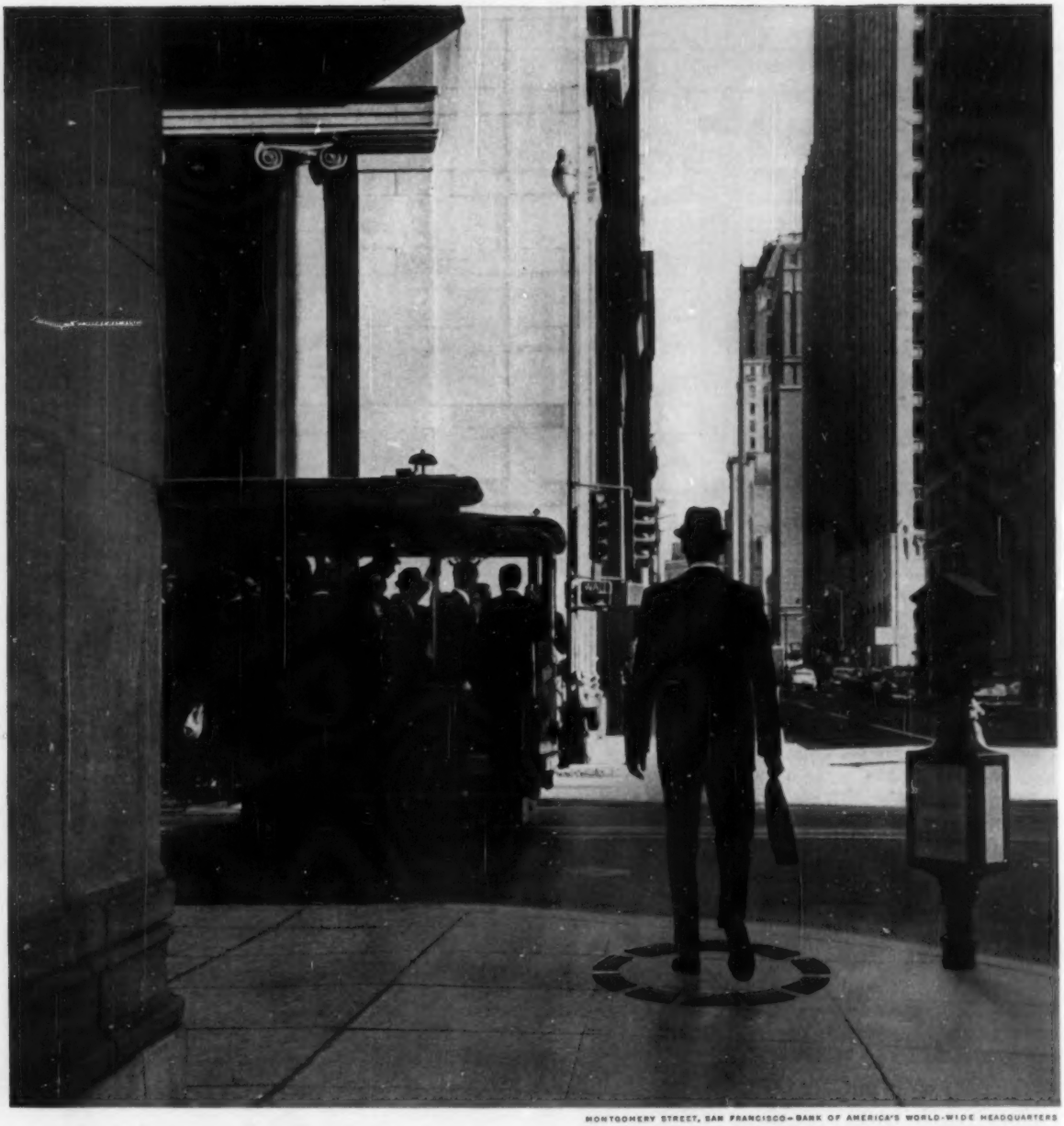
• **Short Range**—On the short range, the U. S. market for steel has been surprisingly limp. Industries that use large quantities of steel—autos, construction, petroleum development, appliance manufacturers—just aren't ordering as expected. The January predictions about business in the soaring Sixties have—so far—fallen flat.

The U. S. steel industry also is still suffering from last year's 116-day strike. Before the mills shut down, big users stocked up heavily on steel. Others turned to overseas suppliers, and they contracted for shipments extending 18 months ahead. Then, when the strike was settled, the industry rushed to build up stocks—but then suddenly stopped.

Big steel users have had a change of heart on how much they should carry in inventory (IMD-May,p17), and with the steel industry operating at only 50% to 55% of capacity over the past few months, they see no reason for carrying large stocks.

• **Long Range** — Steel recently has had to come to grips with a long-range trend: the fact that many applications require less steel —even without substitute materials —than they did in the past. The trend is toward compactness and miniaturization. This emphasis is most noticeable in the U. S. industry, but it affects steel producers everywhere.

Steel research itself has contributed to this trend. Lightweight



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Story begins on p 19

structural steel has been developed that does a better job than conventional grades—but it uses less metal. Steel laboratories recently have come out with thinner gas-transmission pipe. More pipe may be sold, but less steel will be in it. A dozen other examples could be added to these—thinner tinplate for cans, lightweight alloys for missiles, smaller business machines.

Perhaps the cruelest blow to the American steel industry has been the development of "compact" cars. Detroit's new Falcons, Corvairs, Comets, and Valiants use a third less steel than the standard-size cars. This may add up to a loss of a million tons of steel this year.

II. Overseas Competition

U. S. Steelmakers have never been too concerned with foreign competition. For one thing, they are not notably export-minded. For another, they have been too busy in the past keeping up with the home market—which they thought was almost exclusively theirs until last year's steel strike.

Imports, backed by growing plant capacity in other countries, changed some of this thinking. But there is no panic in the steel company boardrooms of Pittsburgh. Steelmakers know their market, and they know that the largest part of the U. S. steel volume is out of reach for foreign suppliers.

• **Trade Shift** — The strike brought soaring imports of such items as wire, nails, reinforcing bars. These are not the high tonnage items, nor are they those that bring the highest prices. They were significant enough, however, to lift U. S. imports above exports for 1959 and for the first four months of 1960. The balance shifted again in May—after most strike orders had run their course—and exports now are running well ahead.

U. S. steelmakers show a mixed reaction when they contemplate the plant construction elsewhere. They are aware of the expanding capacity in Britain, Western Europe, Japan, Australia, and the new plants being built or blueprinted for India, Indonesia, Pakistan, the Philippines, Latin America.

• **Special Steels**—But the developing countries, in their effort to industrialize and raise living standards, will need far more steel than in the past. And they will need types of steel that will not be available from local plants. This is a crucial factor in the plans of steel-exporting countries.

One British observer puts it this way: We are changing from a position in which we shipped steel mostly in simple and rough form for a low price, to a position where we are selling specialized products to steel industries in developing countries. He adds that the biggest increase in steel trade since the war has been between well-industrialized countries—between the U.S.A. and Germany, for example.

Patterns of world trade will be changing. Countries which imported all their steel will become more self-sufficient. Others will begin exporting. A sample of this came when Southern Rhodesia began sending billets to Britain, pig iron to Japan, and Mexico sent steel to the strikebound U.S.A. Further on the horizon looms China, which some experts predict can become a powerful influence.

Meanwhile competition between established producers — the U. S., the Europeans, the U.S.S.R., Japan —will grow increasingly intense.

III. Processes and Products

These considerations have speeded up steel research in both Europe and the U. S. New products are on their way, and also improved methods for making steel. Many of these products and processes have been in the laboratory for years; only now are they being rushed to meet the competition.

This year the U. S. steel industry is investing $1,600-million, the British industry about $350-million, in improvements. A part of this will result in increased capacity, but the larger share will be aimed at reducing operating costs, producing better steel at a competitive price.

The campaign for cheaper steel is being fought on many technical fronts. It ranges from iron mining through smelting, steelmaking, and steel finishing.

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Stainless Steel

Story begins on p 19

nace capacities are being increased substantially by ore beneficiation, furnace improvements, and natural-gas injection. Two years ago furnaces in the U.S. averaged only 1,100 tons per day and only the very best went close to 2,000. Now one company reports an average of close to 2,500 tons for a blast furnace charged with concentrated-ore pellets.

Several direct reduction processes are making headway in Canada, Sweden, Germany, Czechoslovakia. They make iron or semi-steel directly from ore, coal, and limestone without the use of a blast furnace. Operating costs are about the same, but capital costs come down—about $20-million for a direct reduction unit compared to $50-million for the equivalent blast furnace.

Oxygen is the word to conjure with. Oxygen is used either (1) to increase the capacity of an open hearth furnace, or (2) in new facilities, such as the L-D converter (named after the first cities to use the process, Linz and Donawitz, in Austria). Experts say that practically all future steelmaking facilities will be basic oxygen units because the process combines high tonnage, low investment, and low operating cost for a wide range of high-quality steels.

• **Oxygen Lances** — Meanwhile, many steelmakers are adding oxygen-fuel lances to their open hearth furnaces. In six years, basic oxygen capacity in the U.S. has grown from nothing to over 4-million tons; experts guess that it will grow to 18-million tons by 1965. They are showing keen interest in the experimental unit developed by Ford Motor Co. (IMD, July, p 56) which is reported to triple the production rate of an open hearth.

Steel producers also are busy developing new steels, and finding new uses for old steels. Moving to market now are improved corrosion-resistant steel for bridges, lightweight steel conduit, special alloys for missiles and atomic reactors, stainless steel panels that are competitive with aluminum.

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CYPEL* Paper Resin — a resin emulsion which gives significant improvement in printing properties of paper and paperboard — also used to impart high grease resistance, good gloss, and heat-sealing properties to paper and paperboard.

MELOSTRENGTH* Resin (PAREZ* Resin 607) — a melamine-formaldehyde resin. Used to give paper the highest possible wet strength, and to increase its wet-rub resistance, foldability, and dry strength.

CYRON* Sizes — for outstanding results in both alkaline and acid stocks, giving both alkaline and acid resistance.

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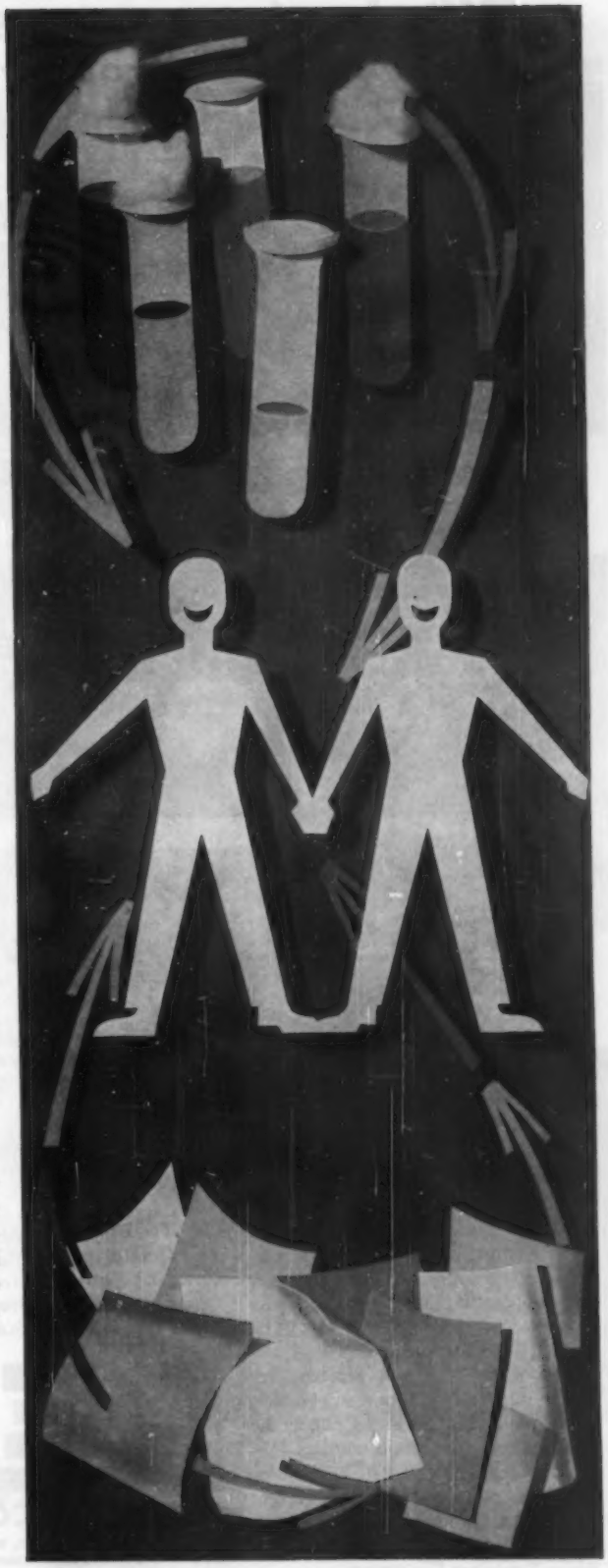

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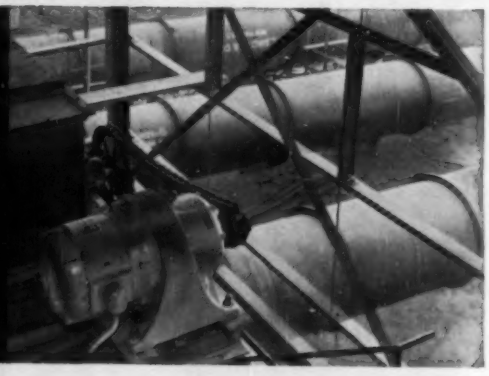

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Story begins on p 19

Plastic-coated steel is now being promoted for everything from luggage and furniture to appliances and building walls.

IV. Salesmanship

The American industry has only recently awakened to the serious competitive struggle ahead. In the past, the steel leaders have been too busy expanding capacity, battling trade unions, and competing among themselves for large orders to take a long, hard look ahead.

• **Action**—Now the industry has taken stock of its position, and begun to do something about it. An industry-wide campaign now is under way, coordinated by the American Iron & Steel Institute, to "state the case for steel."

Steel is fighting back with the same weapons used against it—aggressive advertising, salesmanship, engineering services to big users. The campaign centers on a symbol—the Steelmark (top of page)—which appears as a label or tag on consumer items made of steel, in all advertising and point-of-purchase promotion materials.

"We want to be sure that the consumer has the correct modern image of steel," says Benjamin F. Fairless, president of the Institute.

The industry did some serious soul-searching as it took a look at the inroads of the substitutes. It discovered that substitutes had moved into three areas: (1) where they are ideally suited; (2) where they are competitive with steel; (3) where they are not as good.

• **New Opportunities**—Steel's aim is to recover part of the market lost in these last two areas. It concedes the value of plastics, aluminum, other metals, and ceramics in many applications. But it notes that changing technology is also making opportunities for steel.

The steel markets will grow despite some losses to competitive materials, says the Institute, but the industry's rate of growth will depend upon "how well it takes advantage of the new opportunities which are opening up at an accelerating rate." ●

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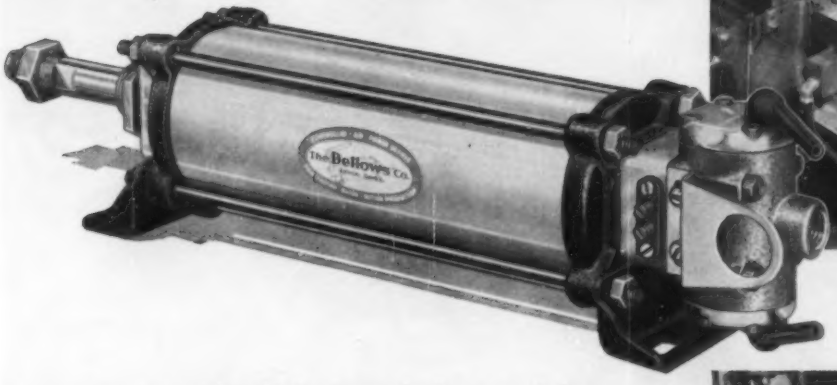

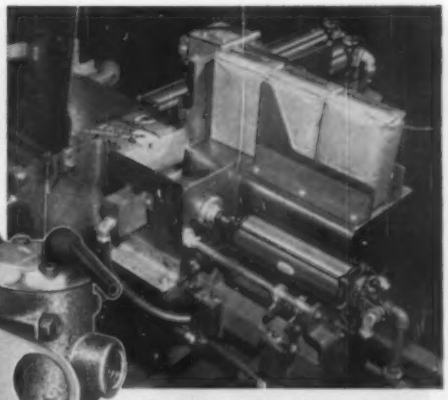

Packaging coffee is simplified by this Bellows Air Motor powered equipment.

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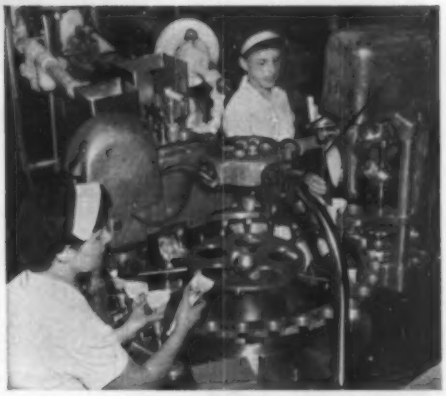
With parts normally available in every tool room, plus one or more Bellows Air Motors, and a little creative ingenuity, you can "spot modernize" scores of operations whose high cost whittles away at profits. The few illustrated here are typical of hundreds we can show you. The chances are good that no matter what you make, nor how you make it, this versatile air cylinder, with its *built-in* electrically controlled valve, can lend a mighty important helping hand to your cost reduction program.



Bellows Air Motors fill ice cream, add nuts and fudge, fold and seal the wrapper in this special machine.

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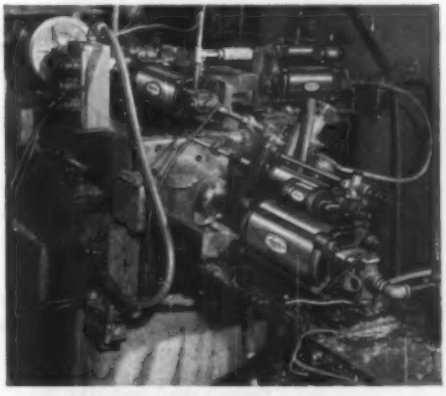

Tail stock, tool bit, and cross-slide are moved by Bellows Air Motors in this lathe conversion.

Bellows-Valvair

Bellows-Valvair, Division of IBEC, S.A., Geneva, Switzerland
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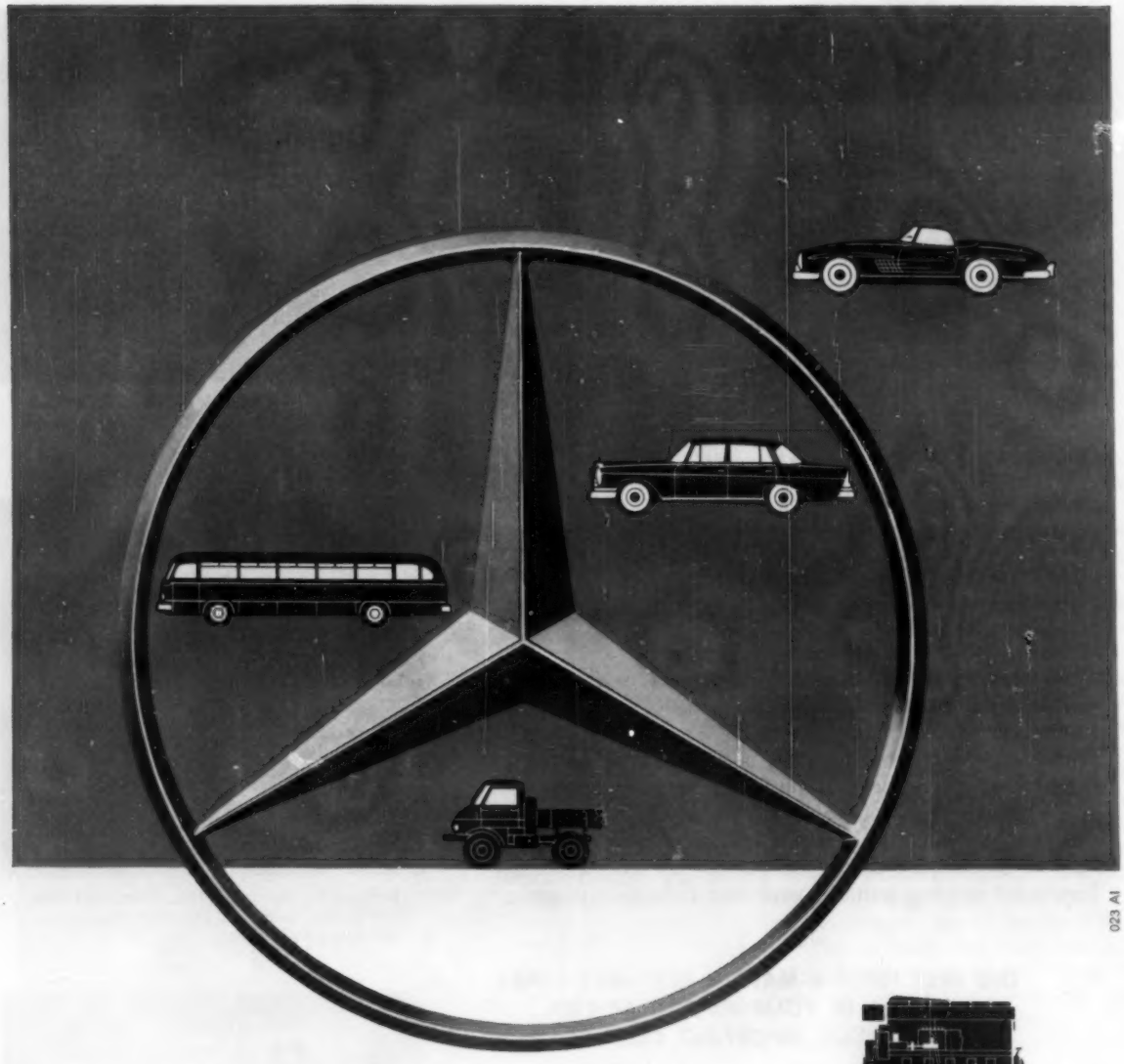
Quality – and what is behind it



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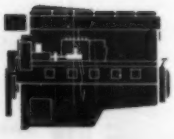

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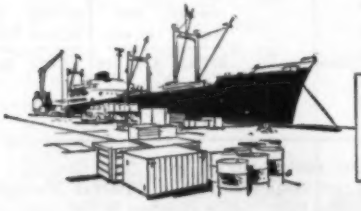
BETHLEHEM STEEL



Bethlehem's great Sparrows Point plant in the Port of Baltimore is the largest steel mill in the U.S.A. This plant loads products for export directly aboard ship at its own docks.

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"Responsibility Accounting" Tells You

To: Mr Gill, *Foreman*
Re: Drill Press Costs

	Amount		(Over) or Under Budget	
	monthly figures	year to date	monthly figures	year to date
Controllable expenses—				
Supervision	$ 350	$ 2,100	$—	$—
Setup	175	910	(10)	40
Repair and rework	230	1,215	20	35
Overtime premium	215	1,145	(25)	(215)
Supplies	95	545	(10)	(5)
Small tools	115	625	20	(35)
Other	285	1,620	40	85
Total	$1,465	$ 8,160	$ 35	$ (95)
	Standard		Variance	
	monthly figures	year to date	monthly figures	year to date
Productive labor—				
Amount	$2,550	$14,250	$250	$400
Hours	1,700	9,500	50	90
Per hour	$ 1.50	$ 1.50	$.15	$.05

1 This production department breaks controllable expenses into seven categories. Gill agreed to this breakdown, and he controls the budget for these expenses. Overtime premiums seem to be throwing his budget out of line. Note that production labor is reported separately: Gill is responsible for labor efficiency, but he does not control the labor budget. Gill reports to Superintendent Goudy . . .

To: Mr Goudy, *Superintendent*
Re: Production Costs

	Amount		(Over) or Under Budget	
	monthly figures	year to date	monthly figures	year to date
Controllable expenses—				
Superintendent	$ 963	$ 5,390	$ (115)	$ (675)
Drill press	1,465	8,160	35	(95)
Automatic screw machine	2,845	17,443	(65)	75
Hand screw machine	3,115	18,085	90	(135)
Punch press	5,740	33,635	(65)	(1,240)
Plating	1,865	9,795	(175)	825
Heat treating	3,195	18,015	210	35
Assembly	5,340	35,845	(625)	(1,380)
Total	$24,525	$147,280	$ (710)	$(2,590)
	Standard		Variance	
	monthly figures	year to date	monthly figures	year to date
Productive labor—				
Drill press	$ 2,550	$ 14,250	$ 250	$ 400
Automatic screw machine	1,310	7,890	110	740
Hand screw machine	5,240	31,760	540	1,560
Punch press	3,720	23,850	215	940
Plating	1,410	7,370	155	1,410
Heat treating	1,630	8,510	1,180	390
Assembly	11,260	68,340	1,570	(310)
Total	$27,120	$161,970	$3,020	$5,130

2 The cost figures from all production departments go into Goudy's report; he is charged with these costs in his budget, plus his own office expenses (which are broken down in a separate report). Overall, Gill appears to be doing an adequate job; three of the foremen, however, are running under budget. For departments over-budget, Goudy will pay close attention to the foreman's reports.

To: Mr Bodoni, *Vice President, Production*
Re: Factory Costs

	Amount		(Over) or Under Budget	
	monthly figures	year to date	monthly figures	year to date
Controllable expenses—				
Vice president's office	$ 2,110	$ 12,830	$ (115)	$ (35)
Superintendent	24,525	147,280	(710)	(2,590)
Production control	1,235	7,130	(125)	(210)
Purchasing	1,180	7,045	95	75
Maintenance	3,590	18,960	(235)	245
Tool room	4,120	25,175	60	(320)
Inspection	2,245	13,680	80	(160)
Receiving, shipping, stores	3,630	22,965	(70)	(730)
Total	$42,635	$254,705	$(1,020)	$(3,655)
	Standard		Variance	
	monthly figures	year to date	monthly figures	year to date
Productive labor	$27,120	$161,970	$3,020	$5,130

3 Charges to Bodoni's budget, besides Goudy's expenses, come primarily from service departments whose heads report directly to the Vice President, Production. Their detailed statements would support this summary, of course. Bodoni's budget suffered a setback this month, and his "to date" budget suffers accordingly. The cost of productive labor is carried over directly from Goudy's cost report.

To: Mr Baskerville, *President, General Manager*
Re: Department Costs

	Amount		(Over) or Under Budget	
	monthly figures	year to date	monthly figures	year to date
Controllable expenses—				
President's office	$ 3,220	$ 18,410	$ (30)	$ (155)
V.P. production	42,635	254,705	(1,020)	(3,655)
Chief engineer	7,135	44,230	135	780
Personnel manager	2,540	15,135	(40)	90
V.P. sales	25,860	151,380	(345)	(670)
V.P. finance	9,230	55,460	(85)	125
Total	$90,905	$539,920	$(1,385)	$(3,485)
	Standard		Variance	
	monthly figures	year to date	monthly figures	year to date
Productive labor	$27,120	$161,970	$3,020	$5,130

4 Production costs, carried over from Bodoni's budget, are a major responsibility of General Manager (and President) Baskerville. Sales expense is the other big item in his budget. From this budget, it is easy to see that five men report directly to Baskerville. As the figures are being translated into product costs and an income statement (see text), Baskerville is asking Bodoni about production costs.

Who, What, How Well

A MUCH-TRAVELED management consultant, recently returned to New York from a sojourn in Latin America, was asked by an INTERNATIONAL MANAGEMENT editor, "What management technique could benefit the world's businessmen the most?" His answer: "Cost accounting."

In the modern manager's lexicon, "bookkeeping" is as outmoded as the Victorian clerk sitting on a high-legged stool. To the left is the basic outline of a modern cost-accounting system, or as it is sometimes called, "responsibility accounting." The outline covers one segment of the reporting system, set up for a medium-sized factory. The outline is the work of Arthur Andersen Co., a Chicago accounting firm. It has been widely distributed by the European Productivity Agency.

• **Responsibility Accounting**—In contrast to old-fashioned bookkeeping, costs are accumulated and reported by level of authority. The object is to provide information that management can use: what has happened, who was responsible, how well the job was done. The system is used in conjunction with a standard-cost budget. Actual expenditures are compared directly with budgeted figures, giving a measure of performance. With minor modifications, the system works just as well using job-cost or process-cost accounting, or in commercial as well as manufacturing firms.

How many reporting levels are needed depends on the company structure, of course. This company, with about 600 employees, has four levels. Note that the president also serves as general manager. There are two other vice presidents, for sales and finance, a chief engineer, and a personnel manager, all reporting directly to the president and general manager.

For a reporting system to work, the man named on the report must be directly responsible for the costs listed; the budget must be his budget. He is charged with specific costs over which he has control; thus the name "responsibility accounting." The reports are broken down in the way—any way—that best helps the responsible managers to budget and control their expenses.

• **Versatility** — Controlling costs is only one aim of an accounting system, of course. Equally important are reports on product costs and costs for inventory pricing. These reports can be prepared by shuffling the figures in the "who did it" reports. The conventional income and expense statement—demanding a breakdown for cost of production, cost of sales, etc.—is prepared from reshuffled figures.

Expenses not charged to a specific department must be added at this point. These are "noncontrollable" expenses, such as depreciation, taxes and insurance, inventory variations. The productive payroll is added; then the cost of raw materials, which is not prorated. Here is a breakdown of production and sales costs:

Production Expenses	
V. P. production	$ 42,635
Chief engineer	7,520
Expense not charged	8,880
Transfers	(285)
Total	58,750
Variances	(3,125)
Standard	55,625
Productive labor	
Actual	30,140
Variances	(3,020)
Standard	27,120
Material	
Purchases	185,965
Variances	(8,745)
Standard	177,220
Standard cost of production (total)	259,965
Costs capitalized (tools)	(1,395)
Inventory (increase)	(10,430)
Standard cost of sales	248,140
Variances	14,890
Actual cost of sales	263,030

Shuffling cost figures is not always a simple job, of course. Production managers are responsible for some costs (shipping, for instance) that should not be charged to production costs. Thus, an adjustment is made via "Transfers." But there are no drastic changes in accounting theory. ●

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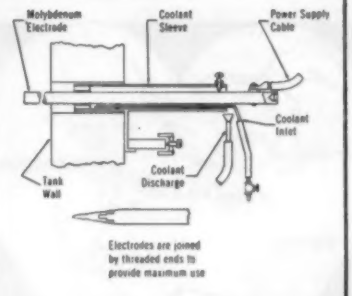

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Wickersham Revisited

In our July "colloquy," Who Should Head Wickersham Mills? four men argue how their particular philosophy of management best suits them for the presidency of a near-bankrupt family textile concern whose president has recently died. Like the editors of the *Harvard Business Review*, from which the article was adapted, INTERNATIONAL MANAGEMENT invited readers to send in their own "votes," with the reasons for their choice. The response—for both papers—has been gratifying and stimulating. And several journals have asked us for permission to reprint the colloquy—so that in future many more businessmen outside the U.S.A. will meet the Wickershams and their problem.

Significantly, HBR's readers voted overwhelmingly for David, who polled roughly 48% of the votes. Next came Benjamin (22%), followed closely by Alfred (20%), leaving a mere 10% for Charles.

IMD's readers so far are in favor of Benjamin, with David a close second. Then follows Alfred. No one has come out for Charles. We give below extracts from readers' replies.

BENJAMIN

. . . As things stand, the continuance of Wickersham Mills is a business decision, and a very sound one. I see no better qualified man than Benjamin to redefine the purpose of the firm. He is a business doctor, an organization man, and seems to have good qualifications for leadership.

My second choice would be David. I like his approach: It is a salesman's, but a salesman who sells service. He seems to have grasped the lines that are open to the textile industry in New England and knows how to tap the best from people.

I like Alfred's reasoning, but I feel he does not yet have the necessary experience.

Charles' points of view are sound and strong, and maybe realistic. But I feel he leans too much to the safe side and is fatalistic. There has to be some sense of achievement and pride to run a business.

Carlos T. Linares, Lima

. . . Benjamin looks at the basic problems. He has considered the sales side and methods of improvements, and is up to date with modern management methods. He would be my preference over David, who, although a good choice, might not have the necessary managerial ability as most of his training has been on the sales side.

Modern business requires a dynamic personality to head an organization, one skilled in managerial problems with the will to work and expand.

R. K. Moore
Mascot, N.S.W., Australia

. . . Benjamin stresses the most urgent problem: to survive, get into the black and move on. His business philosophy is sound and he proposes the right means to this end. The only flaw is that he does not emphasize the sales problem. But this seems to be implicit in his trend of thought.

My next choice would be David. Nowadays, creative marketing is the basis of a sound, progressive business. That is why many leading top executives in the U. S. come from the sales branch. Yet I think one-sided salesmindedness may prove a drawback, especially in the present case.

Alfred is prompted by too egotistic motives. Charles' philosophy is profit only, and predictable profit to boot.

Dino Dancevich, Milan

. . . Benjamin is the oldest of the group. As management consultant he has had an opportunity to know the hidden facts that make many businesses tick. As president he will delegate. So his success is practically guaranteed.

Charles, as banker and stockholder, will be useful to Benjamin.

David will be the most important man in Benjamin's team. His task will be marketing research.

Alfred's story, past and future, can be written in two words: Poor Fidele. Failing to become president, he will go out of the concern, with no harm for the firm. The good three will run the business with less headache.

Pablo E. Baettig
Rosario, Argentina

DAVID

. . . Alfred's attitude is too personal. He does not give any suggestions as to how to save the business from insolvency. He is a gambler, and we

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all know gambling is dangerous since a gambler relies only on himself.

Benjamin talks sense. He "bets he could save $100,000 the first year." Unfortunately he does not say how.

Charles is the banker type. He is the only one who stated that the mill had lost a half-million dollars in nine months. But he has no faith in the business itself. He will be a successful banker but an inefficient executive.

David has found what should be done to improve the mills. He is a salesman. Only selling and merchandising and finding out what customers need will keep a business alive.

David should be president. He is the only one who knows that we don't sell goods any more but service. However, I believe the four men would make a wonderful team: David as president, Benjamin as management consultant, Charles as banker. Alfred should work under David's management (I doubt he will agree). His theory of management is good but he should never be left alone. Business is getting more and more scientific, with nothing left to chance.

Claude C. Paquin
Port-au-Prince, Haiti

. . . My choice would be David, because (1) he is the only one with a detailed program to lead the mills to a bright future; (2) by confining the work of the mill to fine goods he will raise production as there is an unlimited need for these products; (3) as former sales manager of an electric company (i.e. one with the stiffest competition on the market) he will surely choose only those products that sell well; (4) because of his other aims—creating designs, serving customers.

Roberto G. Hild, Rome

ALFRED

. . . Alfred is an engineer specialized in designing textile machinery; he looks like the only one really interested in accepting responsibility for putting the plant back on its feet; and he is on the right track according to modern management when he says: "A business organization is created in the minds of men of imagination, drive, and intelligence."

Milton de O. Rocha, Sao Paulo

. . . Alfred's training and experience ensure that he has a global view of the problem and will find solutions. Recreating Wickersham Mills takes a man of imagination and drive, who can adopt revolutionary methods such as the ones he outlines. Alfred is capable of attaining complete identification with the business, a decisive factor in all enterprises.

L. E. Esparza
Tlalnepantla, Mexico

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Choosing France but Spurning Paris...

. . . a U.S. company discovers the pleasures and problems of moving to the provinces.

FROM ITS NEW European headquarters in Colmar, France, the U.S.A.'s Timken Roller Bearing Co. is "poised for assault" on the European Common Market. The address is significant.

It means that Timken has picked France for its European base. More than that, it means that Timken is one of those companies that have followed the French government's urging to "go to the provinces." Colmar is in the Vosges region, about 400 kilometers east of Paris near the German border. Here is how Timken went about finding its new home, and how it has fared.

• **Systematic Search** — Timken France has operated a bearing plant at Asnieres, a suburb of Paris, since 1928. Before deciding to make its Common Market headquarters in France, however, the company carefully studied the "conflicting claims" of the rival EEC nations. Timken's management people found nothing to outweigh the advantages of growing from its own healthy roots in France: They understood the French business scene, and they had a high respect for the French worker and engineer.

How Timken France decided to settle in Colmar is a model of orderly procedure. General Manager B. H. Riley, writing in the July bulletin of the American Chamber of Commerce in France, says that Timken used the publicity put out on behalf of France's "critical areas" as a guide in its search. But Riley emphasizes the company was not seeking subsidy. Timken drew up its own checklist of points to consider—and tax concessions are not on the list. Indeed, its final choice is not in a really "critical" area at all.

But Timken was interested in the wide-open spaces available in the provinces. The integrated bearing plant it planned required large, ground-floor shops, and an expanse of flat land between 20 and 40 hectares (the company finally settled for a 30-hectare plot). To avoid wasting working time in travel, the site also had to be convenient to Paris: This might mean a two-hour car ride, or an overnight train ride.

• **Colmar**—An engineer was sent out on week-long scouting trips into likely regions, visiting three or four towns a day. He interviewed local authorities, gathering information on actual industrial sites, means of access, the utilities situation. Armed with these reports, company officials visited the places with definite possibilities for its plant site.

Some of the factors Timken took into consideration were the ability of municipal authorities to provide utility services, including a railroad connection, and how fast it could be done; the availability of

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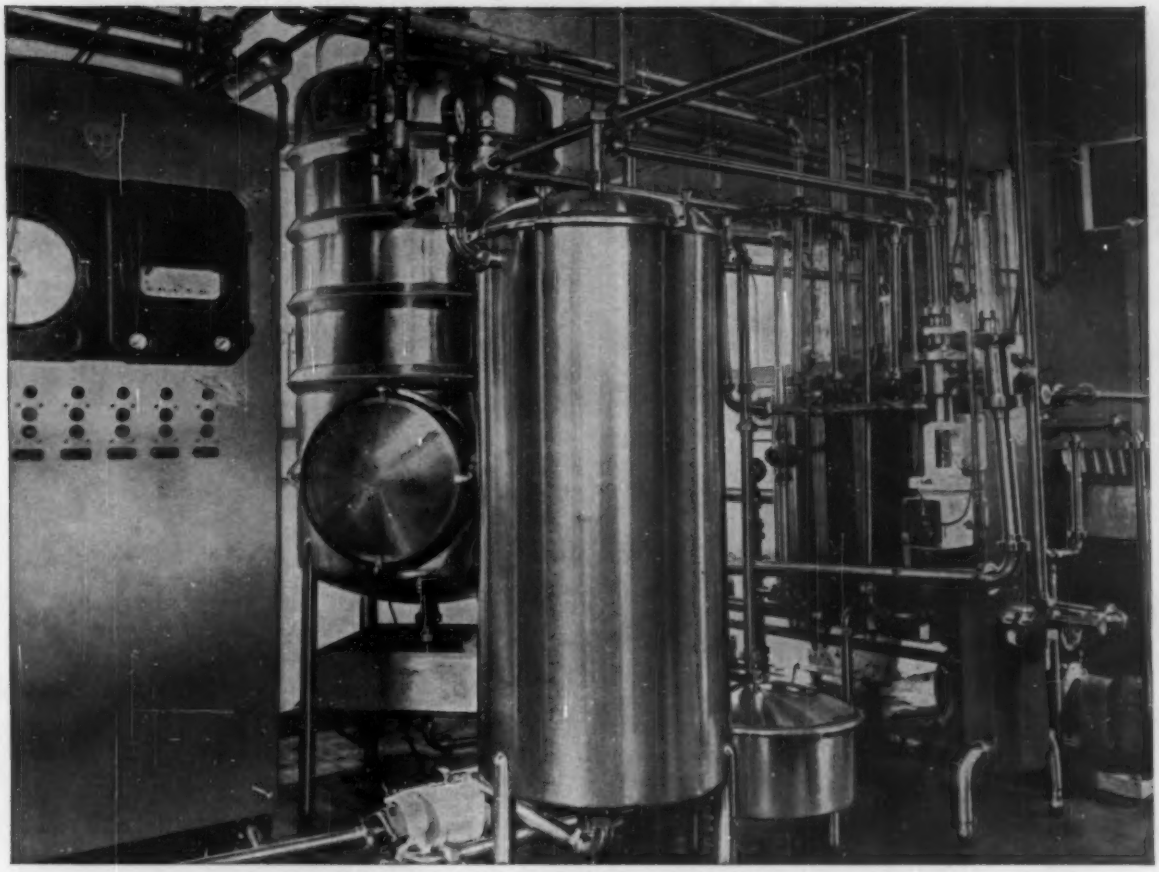

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local services and materials; the labor situation, wage levels, and attitudes toward labor unions; hotel and housing facilities; cultural, religious, and medical facilities; cost of living; climate; fire brigade service; activities of Chamber of Commerce; welcome shown by the people. Timken was also concerned about international transport connections with the Common Market.

Applying its "checklist," Timken narrowed the list to Colmar, Saint Etienne, Chalons-sur-Marne, and Chateauroux. Further investigation narrowed the choice to Saint-Etienne and Colmar; Colmar won out on a final inspection.

As soon as Timken's presence became known, its office was flooded with requests for employment. As of this past summer, Timken had 4,000 applications on file, had hired 150. From the beginning, there were few applicants with the technical skills needed in the bearing plant.

In June, 1959, the company rented space in a Colmar factory and set up a tool room. A technician was brought over from the U.S. to train grinders on machines that were unknown in the Colmar area. A drawing room was also set up. Out of the first trainees, six have been promoted to shift foremen (the bearing shop is already in operation; the assembly line will be ready early next year).

• **Small Triumph**—At this early stage, Timken wished to avoid setting up an elaborate wages department (in Europe, wages are commonly paid in cash). The company decided to pay all employees, even sweepers, by check—every other Friday—and arranged for a bank to be on hand to cash the checks. At the same time, all local banks were asked to cooperate in a campaign to encourage employees to open bank accounts.

"You will imagine our surprise and indeed our pleasure," Riley says, "when a few weeks later, we had a request from all our people to pay their wages not by check but by bank transfer." This procedure is still followed, and Riley considers it "a real factor in favor of good labor relations."

• **Bigger Troubles** — Timken's search for skilled labor has caused friction with other employers in

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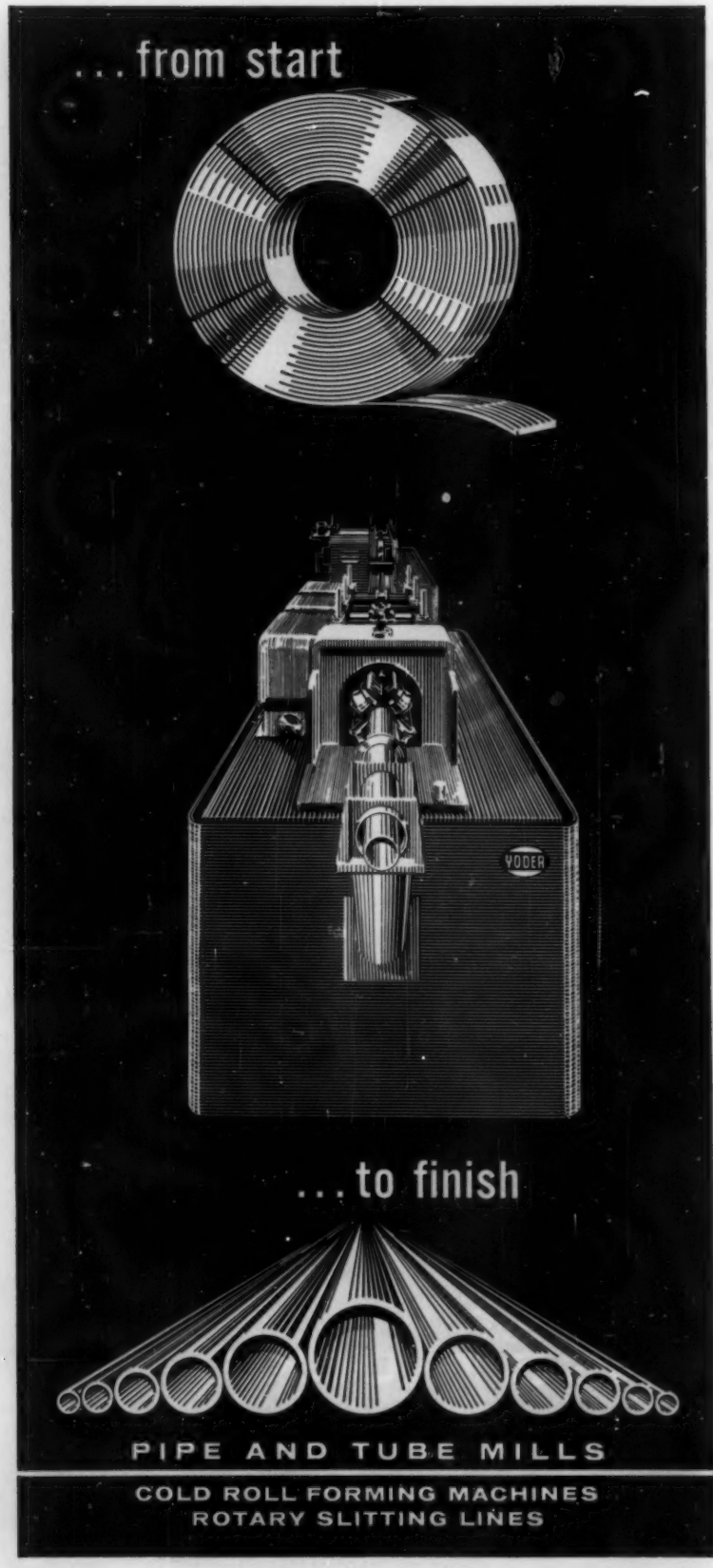

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the area. According to Riley, Timken offers the opportunities of a new and expanding industry; furthermore, he says, the company has gone out of its way to keep from inflating labor rates: "We have, in all cases, offered starting rates lower than the applicants were already getting."

To other employers, however, Timken seems out to steal their best people for essentially the same kind of work. And in many cases, they have retained their men by offering wage increases. Riley comments: "We cannot but think both man and employer are very short-sighted—the man because he has thrown away a chance of advancement and the employer because he is inflating his rates."

What little "heart-burning" Timken has caused, Riley says, is offset by its substantial orders for local products, particularly the packaging materials made in the Vosges region. Riley makes it clear that municipal authorities have been cooperative—and "the people we have hired are settling down happily to three-shift, round-the-clock working . . ."

• **Pleasures of Paris**—Another problem is pointed up by this fact: Workers' wages are lower in Colmar than Paris, but technicians and engineers are paid "the same rates if not a little higher."

As Timken has discovered, luring engineers to the provinces is not easy. Riley speaks of the "magnetism which Paris exerts on the young engineers." A few young engineers have accepted transfers from Asnieres; most of these transfers have meant promotions. (Since 1955, 540 companies have shifted from Paris, but only about 3,000 workers have migrated with them).

Timken's manpower problem has really been solved by moving headquarters: All department heads have been asked to move to the Colmar area.

Riley suggests the personnel problem at higher echelons will change only when many more firms move away from Paris, when "the idea of dispersion" is accepted to the point of putting head offices in the provinces. Then, he says, "the real pleasure of living out of Paris will be appreciated at its true worth." ●

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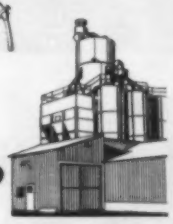

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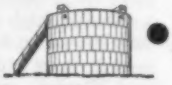

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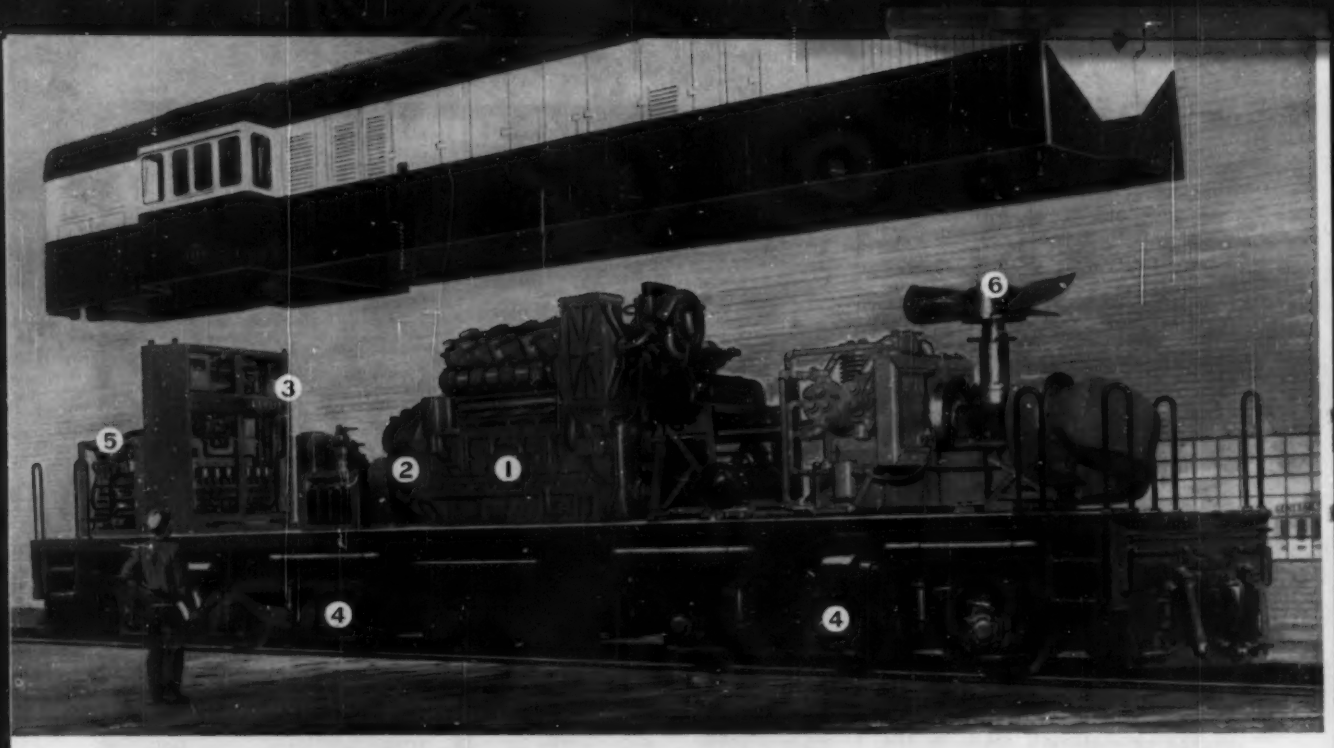

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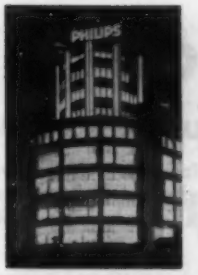

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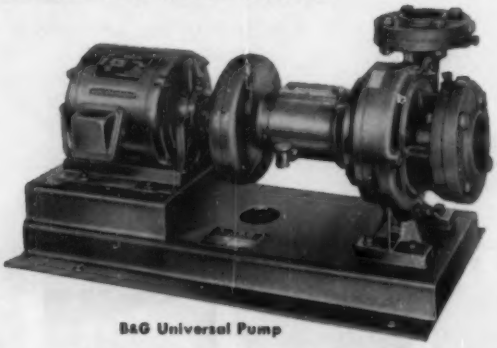

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"Growth" industries that seem to be riding an automatic upward curve sometimes discover they are going down instead. Behind the reversal is a little-known management disease. Here a Harvard professor of marketing, Theodore Levitt, explains it.

"Marketing Myopia"

MEMORIES ARE SHORT. I recently took a casual survey among some intelligent business executives, and nearly half agreed that it would be hard to hurt their heirs by tying their estates forever to electronics.

Fifty years ago, I reminded them, a famous Boston millionaire unintentionally sentenced his heirs to poverty by stipulating that his entire estate be forever invested in electric streetcar securities.

"That is different," they chorused. But is it?

In truth, there is no such thing as a growth industry. There are only companies organized and operated to create and capitalize on growth opportunities. Industries that assume they are riding an automatic growth escalator suffer from "marketing myopia," which is found even in industries that enjoy excellent reputations. There are four conditions that more or less guarantee a cycle of expansion and decay:

Preoccupation with a product that lends itself to carefully-controlled improvement and cost reduction. In the case of the U. S. electronics industry, the greatest danger that faces the glamorous new companies is that they pay too much attention to research and development. They have swept to success on a sudden crest of unusually strong receptiveness to new technical ideas. Their success has been shaped in a virtually guaranteed market. Military orders in many cases have actually preceded plant facilities. Their expansion has been almost devoid of marketing effort.

Thus they are growing up under conditions that come dangerously close to creating the illusion that a superior product will sell itself. And it is not surprising that management continues to be oriented toward the product rather than the people who consume it. Because the product is highly complex, management becomes top-heavy with engineers and scientists, who tend to favor the hard, practical realities of the laboratory, the shop, the balance sheet. What gets shortchanged is the reality of the market.

If a team of consultants had been assigned to design a business situation calculated to prevent the emergence of a marketing viewpoint, they could not have produced anything better.

Too much faith in mass production. We habitually celebrate Henry Ford for the wrong reason; his production genius. His real genius was marketing. We think he was able to cut his selling price and therefore sell millions of $500 cars because his invention of the assembly line had reduced the costs. Actually he invented the assembly line because he had concluded that at $500 he could sell millions of cars. Mass production was the result—not the cause—of his low prices.

Detroit has since hitched its fortune to the relentless requirements of the annual model change, a policy that makes customer orientation an especially urgent necessity. Consequently the auto companies spend millions of dollars on consumer research. But the success of the new compact cars (and before them, the imports) indicates that Detroit's vast researches have for a long time failed to reveal what the customer really wanted. The answer is that Detroit never really researched the customer's wants. It researched his preference for things which Detroit had already decided to offer him.

Mass production does generate pressure to "move" the product. But what gets emphasized is selling. Marketing, which focuses on the buyer, gets ignored.

The belief that growth is assured by an expanding and more affluent population. An expanding market keeps the manufacturer from having to think very hard or imaginatively. And if thinking is an intellectual response to a problem, then the absence of a problem leads to the absence of thinking.

As demonstrated by the petroleum industry, managers that hold this belief attempt to outdo competitors by improving on what is already being done. I believe it is significant that not since John D. Rockefeller sent free kerosene lamps to China has the oil industry done anything outstanding to create demand for oil.

The big contributions made by the petroleum industry are confined to the technology of oil exploration, production, and refining. In other words, the industry's efforts have focused on improving the efficiency of getting and making the product, not on improving the product or its marketing.

The belief that there is no competitive substitute for the industry's major product. The petroleum industry, for instance, has paid little attention to its customers or their basic needs. The industry has grown by fits and starts, always miraculously saved by innovations not of its own making—oil heating, then the internal combustion engine. Now it is ignoring extraordinary developments in automobile power systems.

Companies that are working on exotic fuel substitutes, which will eliminate refueling, noxious odors, and air pollution, are riding a wave of inevitability, not because they are creating something which is technologically superior, but because they are satisfying a powerful customer need.

When supermarkets were introduced, the retail grocers association said there was nothing to fear: The "supers'" success was due to their novelty. Companies with "the courage of their convictions" resolutely stuck to the corner store philosophy. They kept their pride but lost their shirts. (*Harvard Business Review, July-Aug, p45*)

Marketing Men Go to School

TO THE SIGHTSEERS ABOVE, the supermarket outranks the Grand Canyon as a "natural wonder" of the U.S.A. Their eight-week tour of the nation, ending this month, is part of the training course in marketing techniques offered by the International Marketing Institute, a private organization operated by Harvard University professors but with no official university connection.

A six-week classroom course preceded the tour. Forty-three marketing executives, from 25 countries, participated in the "case method" sessions at Cambridge (Massachusetts); 27 stayed on for the tour of American cities.

The nonprofit Institute is the creation of Professors James Hagler, executive director, and Edward C. Bursk, educational director. Hagler gives credit for encouraging the Institute to Turkish educator Nezih Halim Nayzi, whom Hagler met while serving as director of the University of Istanbul's Institute of Business Administration. Nayzi attended the first course.

• **Low Cost**—The entire program cost the participants $1250 each ($900 without the tour). Hagler says the low-cost tour was made possible by the cooperation of American companies. In several cities, he says, companies actually competed for the privilege of being host to the group. Without this cooperation, the tour alone would have cost at least $4,000.

Optimistic after the first year's success, Hagler expects to limit enrollment next year to about 120 for the classroom sessions, 80 for the tour (starting time: late June).

• **Three Phases**—The classroom course was broken into three phases. The first phase covered the nature of demand, why people buy products, consumer preferences, and discretionary buying. Then came an exploration of market shares: how determined, how captured, and how retained. The final phase was concerned with how a market can be stimulated through advertising, promotion, and display techniques. In lectures and case histories, marketing research was emphasized as the best basis for making marketing decisions.

Describing the "case method," a participant from South Africa commented: "We started every day at the ungodly hour of 8 a.m. We sat around a table and discussed a case history. These preliminary discussions were private—without teachers—and broken up into small groups to frame questions to ask in class."

Class discussions began at 9:45 a.m. "One of us led off the discussion," Hagler says, "and then they took it from there. We worked out decisions in actual marketing situations, both in the United States and other countries."

• **Seminars Abroad**—Hagler says the Institute hopes to organize similar programs in other countries. Only one U.S. executive attended the first course at Cambridge; by organizing seminars abroad, the Institute hopes to attract American executives interested in international marketing. (*Printers' Ink, Aug* 19, *p*56)

Founders Discover Marketing Secret

TECHNICAL ADVANCES alone are not always enough to pull an industry out of distress. This is the lesson learned by the U.S.A.'s gray-iron foundry industry—a lesson in basic marketing philosophy.

Even though foundries were creating new families of high-strength cast iron, the competitive position of this basic industry deteriorated steadily for a decade after World War II. Castings were losing their markets to steel, aluminum, and metal substitutes. A total of 809 foundries went out of business.

• **What to Do?**—Two years ago, it became apparent to the founders that drastic action was needed. What steps to take was put into the hands of the industry's association, the Gray Iron Founders' Society (Cleveland, Ohio).

The Society's first action was to conduct a market survey in the metalworking industry. The findings pinpointed the industry's weakness: Purchasing agents and design engineers, the biggest buyers of gray-iron castings, simply did not know the properties or the potential of the new castings. To make it worse, there was aggressive marketing of steel and aluminum.

The Society quickly decided that a counterattack was needed. Because of budgetary limitations, however, a large-scale advertising campaign was out of the question. So the Society shrewdly decided to exploit the one natural advantage foundries have over their competitors: They outnumber steel and aluminum companies 100 to 1.

For the hundreds of small foundries to launch a strong selling drive, they would need help. The Society came forward with:

Marketing Seminars. One-day seminars were held in 11 cities across the U.S.A. Foundry managers in each area discussed ways to build their own marketing programs, beginning with sales analysis of their own customers. Fact sheets and direct mailings were suggested as marketing aids.

Marketing Services. The Society set up a library containing successful sales brochures. It offered assistance in checking potential cus-

Coming clean—chemically

In the open courts and patios of the old cities of Southern Europe, the washerwomen still plies her timeless trade. From a distance, her washing hung out to dry in the sun resembles outlandish flowers grown from the ancient stones. The setting has hardly changed; only the clothes she washes are different ... and the product she uses. For, today, this is likely to be a modern, quick-foaming, dirt-shifting detergent.

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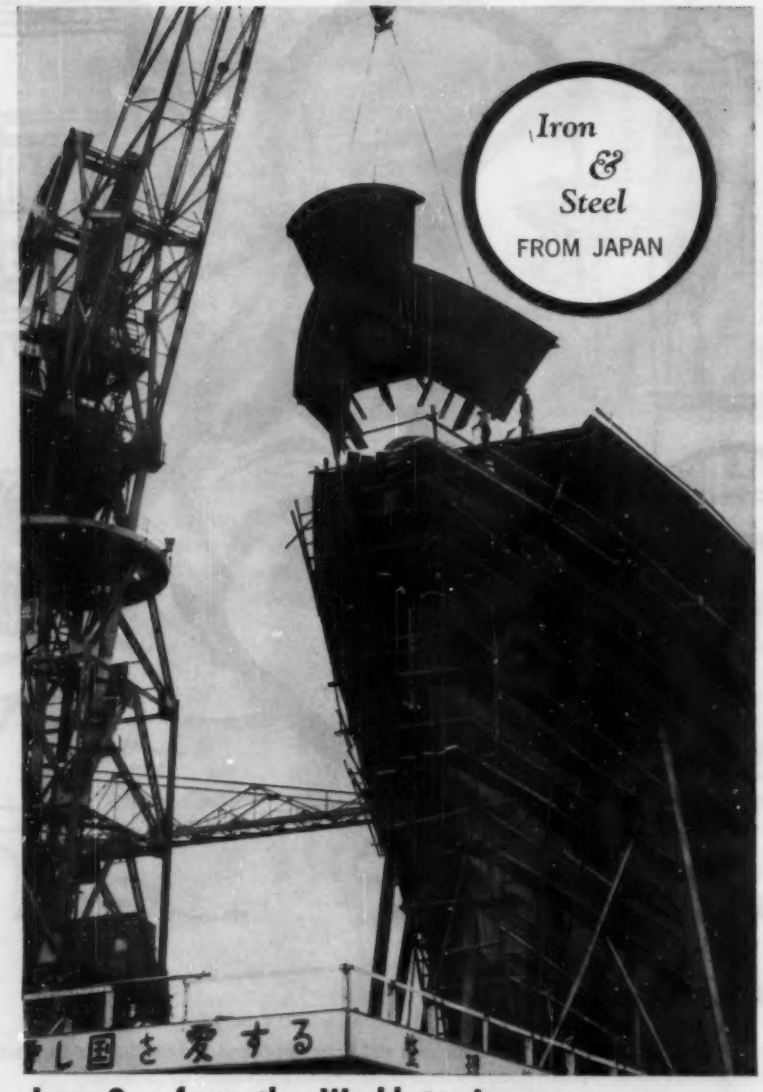

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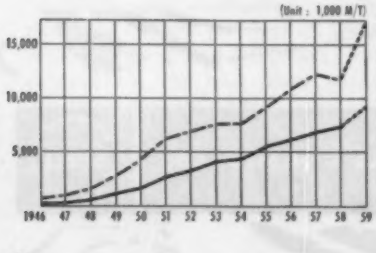

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tomers in a foundry's market area. Marketing techniques were publicized through the support of business magazines such as *Foundry* and *Industrial Marketing*. From *Iron Age*, the Society purchased a "listing service:" a complete directory of metalworking companies, identified by product and broken down by location and size.

Sales Training Clinics. These were a natural follow-up to the marketing seminars. Three-day sessions covered technology, cost-control systems, sales techniques.

Customer Clinics. If the Society's diagnosis was right, these clinics should be the "open sesame" to new markets. They were set up to teach the facts about designing and specifying castings. An "idea file," containing 18 case histories of how castings solved specific engineering problems, was featured.

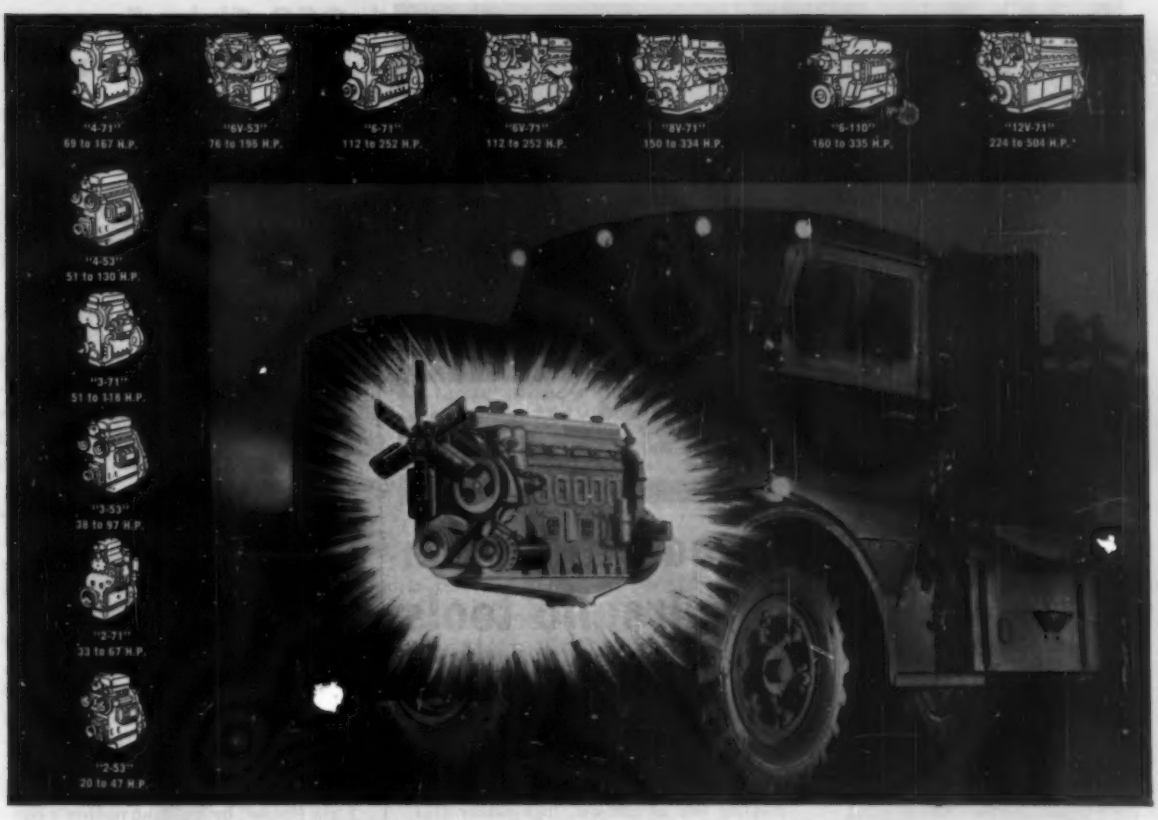
The success of these one-day customer clinics is indicated by the attendance—a total of 620 men, representing 320 companies. Answering a follow-up survey, half the participants said they had acquired new ideas that they could put to immediate use; another third planned to investigate applications for gray-iron castings.

• **Credits and Costs** — Out-of-pocket expenses for the entire program were largely limited to the original survey and tabulation, which cost $6,400. The cost of the clinics and seminars, including materials, was covered by fees.

The Society's staff devoted considerable time to the project, of course. Richard C. Meloy, Marketing Director, and two assistants spent 10 weeks conducting marketing seminars; Meloy and Technical Director Charles Walton worked three months on customer clinics.

To the Society's effort goes credit for halting the industry's downslide, and for creating optimism in the future. In any other "off-year" for iron and steel, the founders would have been pleased to hold their own; as it is, this year they are still hoping for a 5% increase in business over 1959.

As another measure of success, the program has become widely known in gray-iron circles. The Society has made films and other material available to sister societies in other nations, and staff members answer a stream of enquiries. ●



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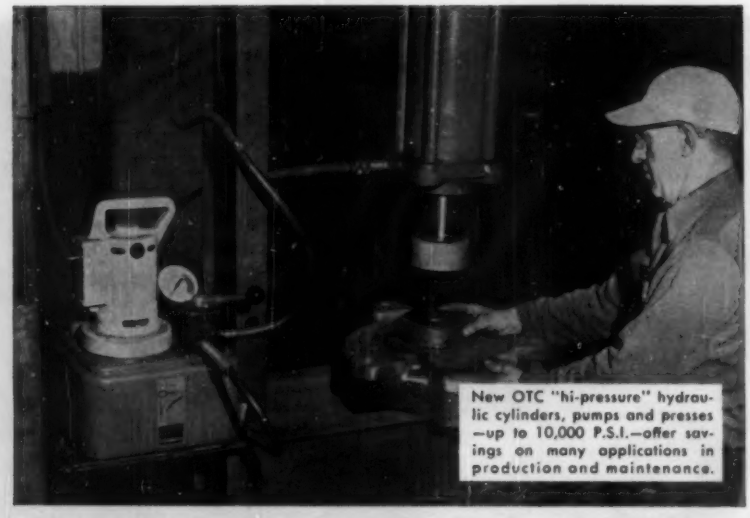
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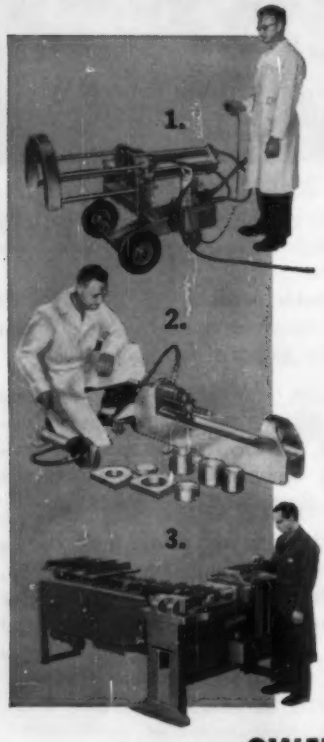

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250 Clubs Foster Sales Management

A NINE-MAN TEAM of U. S. sales executives recently completed a six-week tour of Africa, Europe, and the Middle East. It was the annual overseas trip organized by the U. S. branch of National Sales Executives-International; in the past 10 years, these annual tours have covered just about every area of the world, including the U.S.S.R.

This year, the annual trip was turned into "Operation Enterprise," devoted to helping local sales executive clubs gets organized, and participating in seminars with clubs already formed.

Sales Executives-International is a nonprofit organization with headquarters in New York. There are close to 200 affiliated clubs in the U.S.A., about 50 in other nations.

In the past few months, new clubs have been formed in Cairo, Tel Aviv, and Beirut in the Middle East, as well as in Dublin. A new club is also reported from Wellington, New Zealand; two new Mexican clubs, in Chihuahua and San Luis Potosi, bring that nation's contingent to seven.

• **Local Programs**—Each club is expected to carry on a program to advance all phases of sales management, marketing, and distribution. There are regular meetings, of course. But some of the clubs' best work is done through special club projects.

The St. Louis (U.S.A.) club recently gathered information on how companies evaluate salesmen's performance by surveying its own membership. Half of the respondents reported formal evaluation programs; the most popular interval for evaluation was annually or semi-annually. But about 10% of respondents said they evaluated performance monthly.

In another survey, the Brussels (Belgium) club sent out questionnaires to determine why salesmen fail. Primary reason for failure in Belgium turned out to be the technique (or lack of one) in closing the sale. In a similar U.S. survey, this reason ranked tenth. Lack of self-confidence and lack of ambition placed second and third in Belgium, sixth and seventh in the U.S.A. Lack of planning ability, the number one

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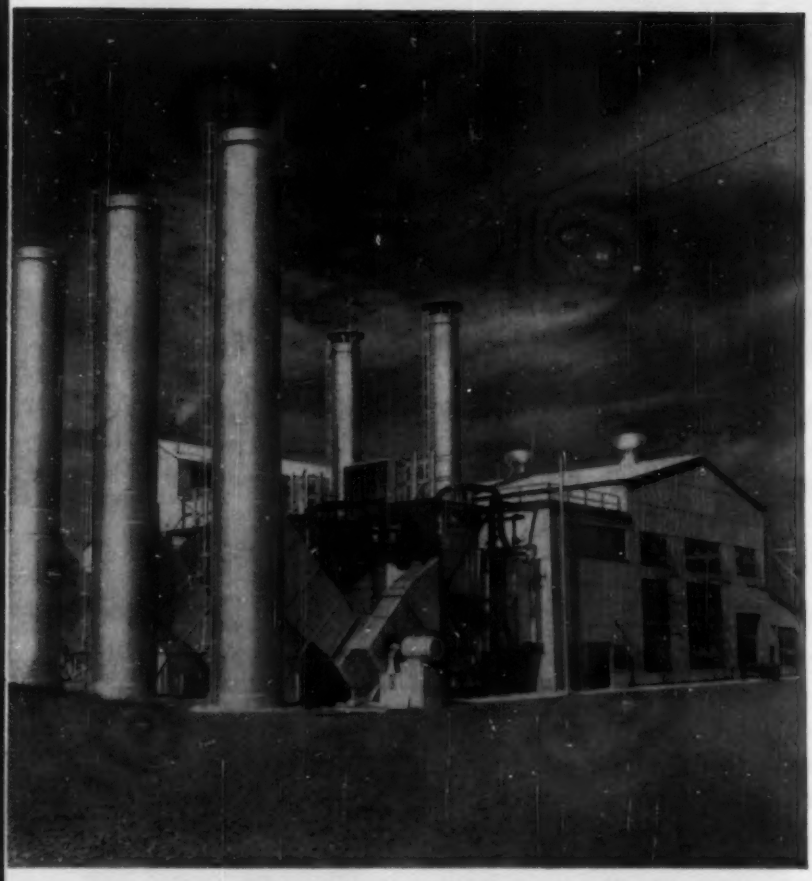
RESEARCH... DEVELOPMENT... RELIABILITY—3 important reasons why industry specifies General Electric equipment



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cause of failure in the U.S.A., placed sixth in Belgium.

• **S.E.C., Inc.**—The Appleton, Wisconsin, club set up a dummy corporation, S.E.C., Inc., with stock shares going to each member. At a "brainstorming" session, the program committee invented a "revolutionary" new product, a paper disposal unit named Hippo, with industrial and household applications.

Then the committee organized a program series around the company's problems. What kind of sales organization was needed? What kind of distribution? Six meetings were devoted to Hippo, with guest speakers exploring aspects of a marketing program.

The program series was unusually successful, according to *Sales Week* magazine, because Hippo forced the speakers to take a practical, realistic approach to their subjects. "How to do it" was the dominant theme in each presentation by the guest "consultants." ●

In Marketing

METAALCHEMIE, a new organization formed by Dutch process-equipment makers, will set up a joint research program, a file of product catalogs, and joint exhibitions at trade fairs. Biggest task, however, is to convince Dutch buyers to buy locally: Their reluctance is based on a fear that processing secrets will leak out to competitors.

U.S. SUPERMARKETS last year sold $100-million worth of garden supplies. This fact alerted the marketing manager of Chun King Corp. to a promising new product. A processor of packaged Chinese foods, Chun King had developed a special soil mixture to grow mushrooms indoors. As "Living Earth," it is now doing very well in several test markets.

RETAIL INVASION of EEC countries is planned by A l'Innovation, the Brussels department store. First operations will be a string of "junior" department stores in France, run along supermarket lines. A jointly-owned chain of Dutch counter stores, Priba, will be expanded.

CLARK EQUIPMENT moves mountains . . .

. . .with detachable bodies

Load BROWN Shipping Containers like you'd load any truck. Clamp two or more of the 9 to 24 ft long Containers to a trailer bed. At each destination, lift off desired Containers. Lock legs. Contents remain protected, can be unpacked any time. Thus, like Kroehler, many shippers keep their costly tractors and trailer chassis "on the move."

. . .with tree-leveling dozers

Any contractor in sand areas will tell you the repair problems he has with crawler tracks. Also, how interested he is in the recent low-downtime successes of big rubber-tired Dozers. Like this MICHIGAN, shown handling a vital sand-area job . . . elimination of the tree-killing nematode from Florida's citrus groves. Unit uproots the worm-infected trees, stacks them for burning, then deep-discs the land for fungicide treatment.

Michigan is a registered trade-mark of

CLARK EQUIPMENT

CLARK EQUIPMENT INTERNATIONAL, C.A.
Centre International Rogier • Brussels 1, Belgium
Construction • Material Handling • Truck Trailer Equipment
Associated manufacturers in Argentina, Brazil, Belgium, England, France, Germany, Australia, Japan, and U.S.A.

listen...

the new Westinghouse dry-type distribution transformer is quieter

(more compact, too!)

Westinghouse dry-type distribution transformers are now so quiet you can install them almost anywhere in your plant or office; noise level is 15 decibels or more below NEMA standards. This load-center installation reduces length of secondary wiring, minimizes line losses and cuts your regulation problems.

Worried about space? Westinghouse has cut transformer size as much as ½ and weight as much as ⅓. That means you can easily mount them overhead or on wall brackets. Installation cost is lower. And because there's no need to filter or replace oil, maintenance costs stay low.

Westinghouse dry-type transformers are completely safe for use anywhere. Natural air-cooling eliminates liquids and toxic gases, so there's no danger of fire or explosion.

For precise voltage step-down for lighting loads, machine tools, ventilating fans, rectifiers and other equipment — or to step up low voltage for special applications — investigate these new units. They're available in ratings up to 5,000 volts, single phase from 3 kva to 167 kva, three phase from 3 kva to 500 kva . . . and with switches and circuit breakers as completely self-contained units. Your Westinghouse distributor can advise the best type for your own power requirements. Or write for bulletin 60-E, Westinghouse Electric International Co., 40 Wall Street, New York 5, U.S.A. You can be sure...if it's Westinghouse.

Westinghouse

● PRODUCT DIGEST

Spray-on Coatings Protect Buildings

Two new spray coatings have been developed in the U. S. for protecting metals, wood, and concrete against corrosion and wear.

Tiny flakes of glass, called Fiberglas Flake, are the main ingredient of the first coating. These are mixed with resin, fillers, accelerators, and, if desired, color pigment so that the coating can be sprayed right on, without mixing on the job. (In other coatings of this type, made from chopped glass fiber roving, the base of resin and catalysts and the glass itself have to be mixed as they are applied from separate nozzles.) A single 20-mil thick application of the coating contains 50 layers of Fiberglas Flake. The manufacturers claim this is roughly equivalent to 50 coats of paint. The material is still in the testing stage, but limited quantities are being marketed in the U. S. *Owens-Corning Fiberglas Corp., Toledo 1, Ohio, U.S.A.*

RENcoat, the second coating, has a base of epoxied vinyl plastic. It is sprayed on in two layers, a primer and a finish, to protect surfaces from moisture, corrosion, impact, temperature change, chemical attack. The manufacturer claims that each mil of thickness is equivalent to a year of wear. The material can be supplied in any color desired, and can be made to match natural finishes. RENcoat has already been applied to roofs, concrete and metal walls, swimming pools, underground storage areas, floors—even a lighthouse exterior. *Ren Plastic Inc., Lansing, Michigan, U.S.A.*

Automatic Weighing System

An automatic weighing system known as MEWS has been produced in England. Basically, it consists of a special photoelectric transducer that can be attached to weighing equipment. This "translates" movements of the weigh-beam into a voltage which controls the rate at which materials are fed onto the machine and stops feeding when a predetermined quantity has been reached.

The system can also be set up to produce labels showing tare and net weight. These can also be automatically recorded for use with punched card or tape accounting equipment. *Microcell, Ltd. Camberley, Surrey, England.*

New Refractory for Process Equipment

A new refractory material now being tested in aluminum reduction cells (pots) as a substitute for carbon, is likely to have wide applications in many kinds of process equipment manufacture: for melting and alloying equipment for non-ferrous metals; transfer lines for molten metals and hot chemicals; kilns, incinerators, and furnace muffles. The material, called Crystolon 63, is a "complex nitride-bonded silicon carbide," whose advantages it offers at 25% lower cost. *Norton Co., Worcester 6, Mass., U.S.A.*

New British Tractor

A new tracked earth-mover dispenses with the usual transmission, and operates with just two control levers instead of the conventional six. A multi-piston, variable-stroke pump for each track is connected to a hydraulic motor. The pump-motor combination for each drive sprocket has its own manual control lever; lever movement determines the direction and rate of travel. Modified jet-engine fuel pumps are driven by a 6.9-liter engine developing 95 bhp. at 2000 rpt. The tractor was developed by *John S. Burns, 46 Princes Court, London 8W3, England.*

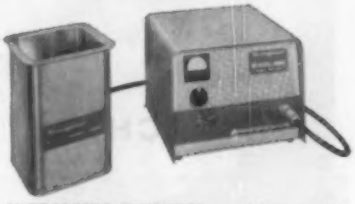
In Brief . . .

Baby camera, 3.75 cm in diameter, 3 cm long, is fuse-operated, uses disk-shaped film, takes pictures with 0.3 millisec exposure at f.8. *Fairey Aviation Co., P.O. Box 85, Salisbury, S. Australia* . . . **Electroconductive printing inks** permit direct printing of electrical circuits, reduce circuit costs for mass-production appliances. *Sinclair & Valentine Co., 611 West 129th St., New York 27, N. Y., U.S.A.* . . . **Recorder for telephone conversations,** transistorized, is latest from *Victor of Japan Ltd., 1 Nihombashi Hon-Cho, 4-Chome, Chuo-Ku, Tokyo, Japan.*

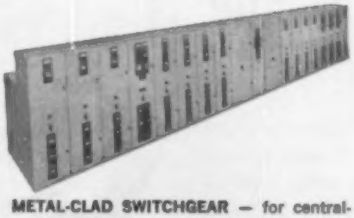
Westinghouse

MAKES 8,000 BASIC PRODUCTS FOR THE WORLD'S ELECTRICAL NEEDS

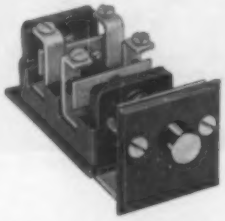
Wherever power is used in industry and commerce, Westinghouse equipment speeds production, cuts costs, saves millions of man-hours. Typical of the advanced design of these 8,000 basic products by Westinghouse are three examples –



ULTRASONIC CLEANERS – with exclusive Westinghouse Magnopak transducer, for industrial cleaning of parts and complex mechanisms 2 to 10 times faster, 39% to 100% more effectively, and at far lower cost than other methods. High frequency sound quickly removes foreign matter from metals, plastics, ceramics, glass without scrubbing or disassembly.



METAL-CLAD SWITCHGEAR – for centralized circuit control and protection of generators, motors, bus and feeders up to 13.8 kva – a complete line of standardized assemblies, built, wired, tested at factory. Superior features include Westinghouse-developed Limitrak insulation, horizontal drawout magnetic de-ion circuit breakers.



PUSHBUTTONS – The extensive Westinghouse line has a large choice of types and enclosures to meet every control application, with virtually limitless circuit combinations. Shown here is heavy duty HD type for severe service conditions where absolute reliability is essential.

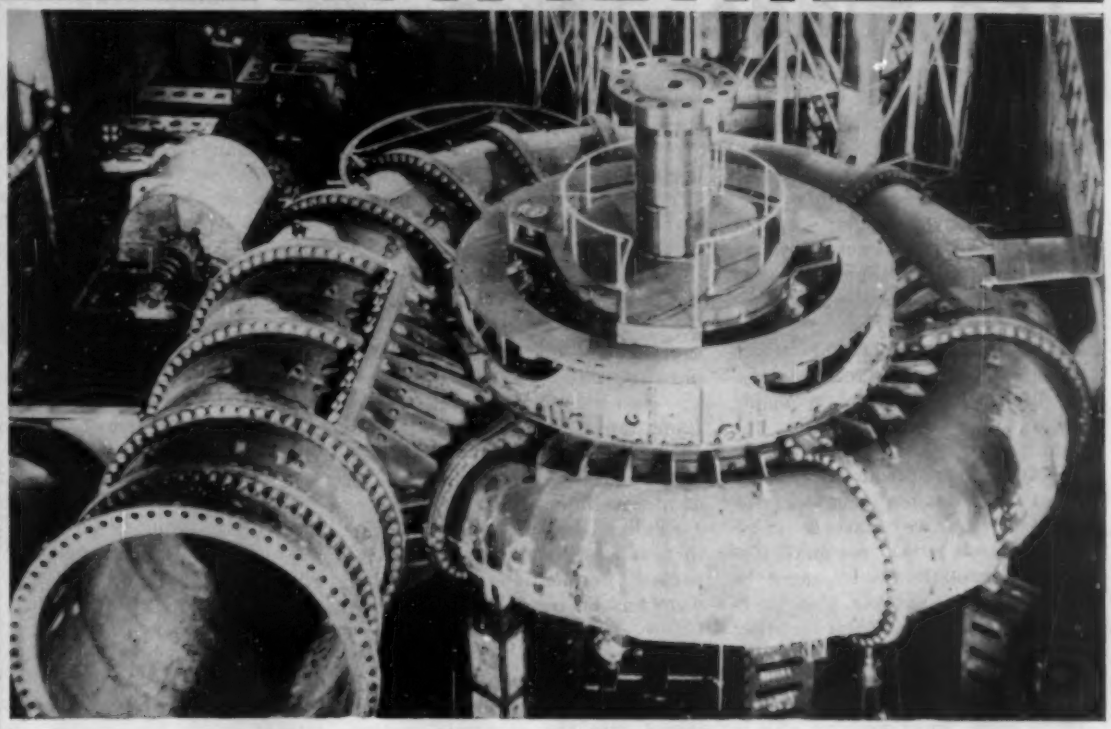
LIFE'S ON THE MARCH...

We're moving across unmapped territory with tremendous strides. Almost daily someone, somewhere, reports a breakthrough into regions of knowledge that have been secret since the world began. The atom has been harnessed, manned space flights are just around the corner, and every discovery brings others in its train, for new techniques need new materials. Nuclear power has brought demands for materials with combinations of properties never needed before, and only found in metals put aside by scientists in the past as awkward curiosities. The production of these new metals for the nuclear engineer has presented scientists with one of their greatest challenges—a challenge that could only be met by a many-sided organisation such as I.C.I. Its wrought zirconium plant is Europe's largest, its new plant for making wrought beryllium is Europe's first, and already I.C.I. scientists and technologists have plans for producing the other rare metals that may one day be needed for nuclear power stations and even for space rockets. It needs brains and money to keep up with events in this age of great discoveries, and I.C.I., with a research staff of 4,500 and a research and development budget of more than £14 million a year, has both.

IMPERIAL CHEMICAL INDUSTRIES LTD., LONDON, S.W.1

ICI

HITACHI



Another big Hydraulic Turbine and Generator by Hitachi

Hitachi has recently completed two 137,500kw/125,000kVA hydraulic turbines and generators for the Miboro Power Station in Central Japan. The turbine is of the vertical-shaft Francis type, and specified for a speed of 225 rpm, a maximum effective head of 200 m and 76.6 cu.m/sec water flow, making it one of the largest units of its kind in the world. Its runner has a maximum diameter of 3.7 m and the main shaft a diameter of 95 cm. The spiral casing, which was constructed in 13 sections to facilitate transportation to the site, has an inlet diameter of 3.35 m and an outer diameter of 11.2 m.

The generator presents a high-torsoed appearance as shown in the photograph, having been so designed in consideration of the comparatively high speed. Since the generator was designed for a rated voltage of 16,500 volts and, in this respect, represents the first such attempt in Japan, particular care was taken in the corona-shielding and impulse resistance of the stator winding. The generator is rated at 60 cycles, 225 rpm and 0.9 power factor but is also capable of operating at 50 cycles, 187.5 rpm and 1.0 power factor.

Hitachi, Ltd.
Tokyo Japan

Por Cable : - "HITACHY" TOKYO

● TECHNOLOGY

The Hidden Force

RECENT STUDIES indicate that land, labor and capital all have been vastly overrated as causes of increases in production.

Land (i.e. all natural resources) and capital often play minor roles in an industrial society—as the Swiss, the Swedes, and the Japanese have been delighted to discover. And less labor is needed as output rises.

The really great factor, which dwarfs all others, is technology—the hidden force—which economic theory has always taken for granted.

• **Mysterious Element** — Economists have so taken technology for granted that we scarcely know what it is. It is the "residual" element in growth which cannot be explained by anything else. It is the mysterious element consisting of new knowledge, new techniques, new skills, new organizational schemes. It is what makes productivity grow, when nothing else is being invested in plant to make productivity grow.

Just how enormously technology outweighs investment in plant and equipment in producing increases in per capita output is shown by three recent U. S. studies:

—The National Bureau of Economic Research has found that from 1871 to 1951, technological advance accounted for 90% of the rise in U.S. output per man-hour.

—A study of the Massachusetts Institute of Technology shows that, from 1909 to 1949, 87.5% of the growth in output was due to improving technology.

—And Benton F. Massell, of the Rand Corp., studying the period 1919–55, finds that technological change accounted for about 90% of the rise in output per man-hour.

• **Policy Implications** — These three independent studies have important implications for government and business leaders. In the future, Massell declares, policymakers will have to worry more about the factors that govern the rate at which innovations are injected into the economic system than about such items as taxes, interest, sales capacity ratios.

The discovery of the overriding importance of technical change, says Massell, should be "no small cause of concern, and possibly embarrassment, to economists." They have traditionally treated technology as lying outside the theory of production.

Ignoring technological change in explaining short-term shifts in output was probably all right a good many years ago, Massell adds, when "the given state of technological knowledge was relatively static." But nowadays this loose assumption of static technology is seriously misleading.

• **The Role of Capital**—To stress the role of technological advance is not, of course, to deny that its impact upon the economy works through the investment process.

New knowledge does not begin to operate until it is embodied in new investment. Knowing how to automate an assembly line, for example, will not do much for the economy until you invest in the new equipment.

However, an economy that is rapidly increasing its capital stock is also likely to be speeding up its technical progress. And the converse of that proposition is the rate of capital investment will be greatest when change comes fastest —because the rate of profit will then also be high. (*Business Week, Aug. 6, p 68*)

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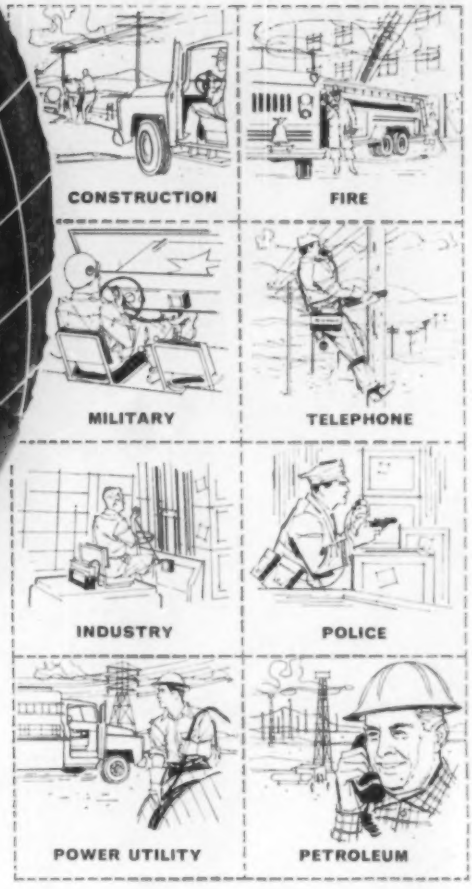

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People tell each other about products they use. They compare price, performance and reliability.

The really fine products that give the *most value* become the sales leaders.

That's why we're proud of the fact that, *in all the world*, more business, more public services use Motorola 2-way radio than any other brand.

Motorola 2-way radio is engineered and built to give the best value—the best long-run dependability and service. Users are enthusiastic about Motorola's factory-supervised maintenance and parts service organization, too. Satisfied customers make Motorola the world *leader*.

Write or wire for information about Motorola's complete line of communications products.

FREE—send for 16 page product catalog No. 21

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75 "Eucs" used on London to Birmingham Motorway

Rock excavation from the motorway was shovel-loaded into rear-dump Euclids of 15 and 22 ton pay-load capacity.

Heap loaded with about 21 yds. of sandy clay, the "Euc" scrapers made a complete cycle on 3 mile round trip hauls in about 15 minutes.

Construction of a new 55 mile divided motorway from Luton to Rugby is Britain's biggest road job . . . an 11½ million cu. yd. project. John Laing and Son, Limited, of London, the Civil Engineering Contractors, assembled a huge fleet of earthmoving equipment to maintain high production on the four contract sections. This fleet included 42 "Euc" rear-dump haulers, 20 scrapers, a Euclid Loader and 12 bottom-dumps.

On a 5 mile section of the new road near Woburn, most of the excavation was moved with 5 Euclid Model S-18 Scrapers of 21 cu. yd. capacity. Powered by 320 h.p. diesels, these "Eucs" maintained fast cycle time over well kept haul roads on round trips averaging 2½ to 3 miles in length. They worked two ten hour shifts per day and moved well over a half million yards in four months to keep the job well ahead of schedule.

Modern Euclid equipment can speed your jobs, too—whether it's heavy construction, mine, quarry or industrial work. The Euclid dealer in your area will be glad to give you facts and figures on the models that meet your requirements and give you the best return on investment.

GENERAL MOTORS OVERSEAS OPERATIONS • 1775 Broadway, New York 19, N. Y., U. S. A.

EUCLID (GREAT BRITAIN) LIMITED • Newhouse, Lanarkshire, Scotland

EUCLID PRODUCTS

New

RED RING MACHINE SHAVES LARGE GEARS FASTER... MORE EFFECTIVELY

Table in shaving position

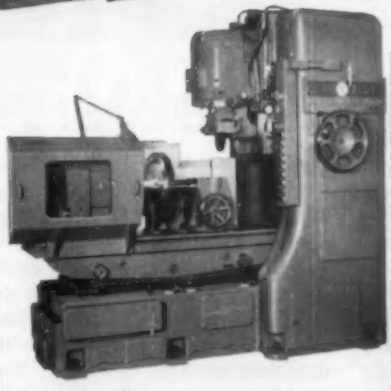


Table in loading position

Significant design innovations in the New Model GCX enable you to shave the larger, heavier gears (up to 24" Pitch dia.) with the same facility and precision as smaller gears are shaved.

Methods of loading and unloading are unrestricted. The work is loaded with the table at the extreme limit of its travel—clear of any overhead interference.

At the end of the shaving cycle, the cutter head rises in rapid traverse to clear the work and the table returns to its loading station for quick unloading.

If you manufacture such gears as are used in trucks, agricultural or ordnance equipment, ask for Bulletin S60-8 and get the full details of this new, economical method of gear shaving.

EXCLUSIVE RED RING ADVANTAGES

- Cutter above the work permits chips to fall away from and not into the cutter teeth.
- Thus positioned, the cutter is not vulnerable when the work is accidentally dropped while being loaded.
- Cutting pressure is applied downward, taking full advantage of gravity for rigid stability.
- Floor space, less — Rigidity, greater

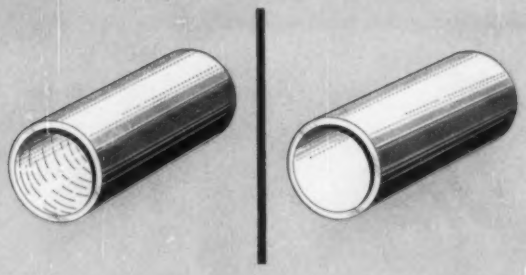
SPUR AND HELICAL GEAR SPECIALISTS
ORIGINATORS OF ROTARY SHAVING, GEAR HONING AND ELLIPTOID

NATIONAL BROACH & MACHINE CO.

5600 ST. JEAN • DETROIT 13, MICHIGAN

WORLD'S LARGEST PRODUCER OF GEAR SHAVING AND HONING EQUIPMENT

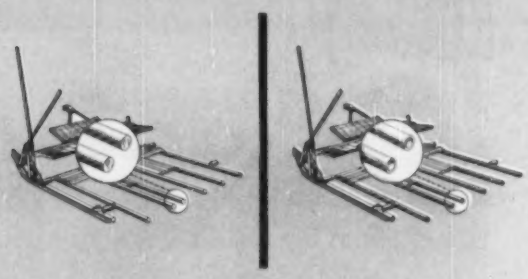
Material tailored to a specific job



BEFORE: The tubing for a relay housing needed a broaching operaiton to erase tiny radial marks inside the tube.

AFTER: Value analysis led to the buying of mill-burnished tubing, eliminating need for broaching and extra handling.

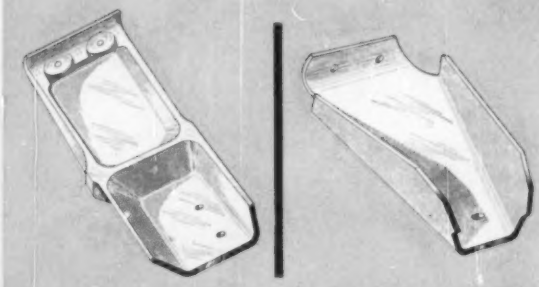
Saving through a change in materials



BEFORE: Past practice had been to use black wrought iron for the structural frame of a six-bale stocker.

AFTER: A shift to welded steel tubing has improved appearance without loss of strength, and cut costs $3 a unit.

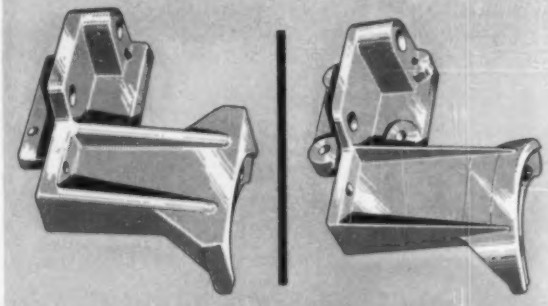
Less costly manufacturing process



BEFORE: When this aircraft component was machined from solid bar, waste ran high, part weighed too much.

AFTER: Since value analysis, the part is stamped from sheet metal. No machining is needed, weight is cut 40%.

Change in material cuts down finishing



BEFORE: Finishing required 21 machining operations when this mounting bracket was sand cast in aluminum.

AFTER: Now that the part is zinc die cast it needs only one trimming operation. Thinner walls helped cut costs.

Value Analysis: Cost Factors

A U. S AIRCRAFT COMPANY last year spent $115,000 to save about $3.35-million. The company, Boeing Airplane Co., did it by an organized and all-inclusive program of Value Analysis.

Purchasing Week magazine has collected some dramatic examples (illustrations above) of how companies, big and small, are saving money, cutting down inventories, and making better products by close scrutiny of all factors that go into cost—which is the essence of Value Analysis.

There is nothing new about the basic principles of Value Analysis. It has been used by many companies under a variety of names—Cost Analysis, Productibility, Cost Engineering, Engineering Cost Control. What is new is the organized methods now being used—in answer to the challenge of competitive change, new materials, new techniques — and the important monetary savings that many companies are achieving.

Value Analysis has become a function of top management. Aware of the potential savings here, companies are hiring and training special analysts in the work. Large companies have set up teams of technical men to offer this specialized service to their buyers, engineers, designers, and shop foremen.

• **Logical Questions**—A trained analyst thinks in terms of function. He examines a product or component in a series of logical steps:

—What is the nature of the part?

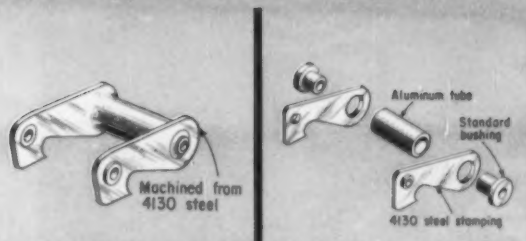
—What function does it perform?

—What else would do the job as well or better?

—What would it cost?

Industrial progress has led to the demand for the new science. New techniques and new materials are constantly being introduced, old materials being improved. A wide range of plastics, synthetics, rare

Standard parts serve in custom assembly



BEFORE: Production costs and material waste both ran high when aircraft components were machined from steel.

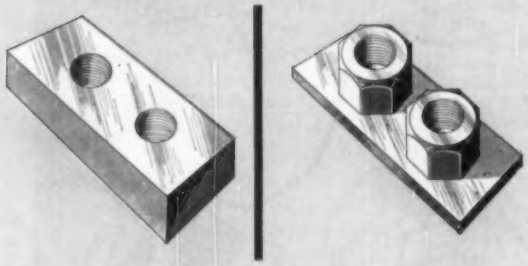
AFTER: Analysis led to combining aluminum tube and bushings with steel stampings —saving $6.45 per part.

Adhesive assembly cuts down rejections

BEFORE: When pump parts were cast in a single piece by sand mold process, rejection rate ran as high as 25%.

AFTER: The rejection rate has been cut to almost nothing by adhesive-bonding three die castings into the final part.

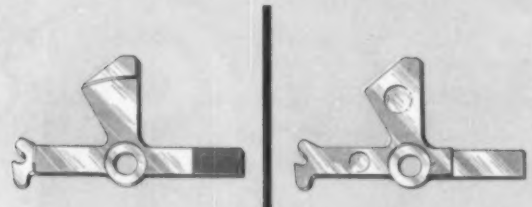
Standard components do special duty



BEFORE: This clamp bar for a diesel-electric locomotive had to be machined from bar stock, then drilled and tapped.

AFTER: Now the clamp is made by welding two standard nuts to a stamping, cutting costs 50%.

New material takes over an old job



BEFORE: The beryllium-copper link for a business machine had to be blanked, pierced, hardened, milled, bored.

AFTER: The part now is cast from DuPont's Delrin in a single step. Service life is increased, costs reduced 80%.

Go Under the Microscope

metals, devices, fittings, hardware, now are available to manufacturers. But the size and complexity of the output makes it difficult to know what to buy, what to fabricate.

A purchasing agent may find himself buying materials specified in a design without being aware of the new, less expensive, equally reliable alternatives that are available. A production man may be custom-building an appliance from raw materials, and then discover that outside shops are mass-producing the components that he needs at a fraction of the cost.

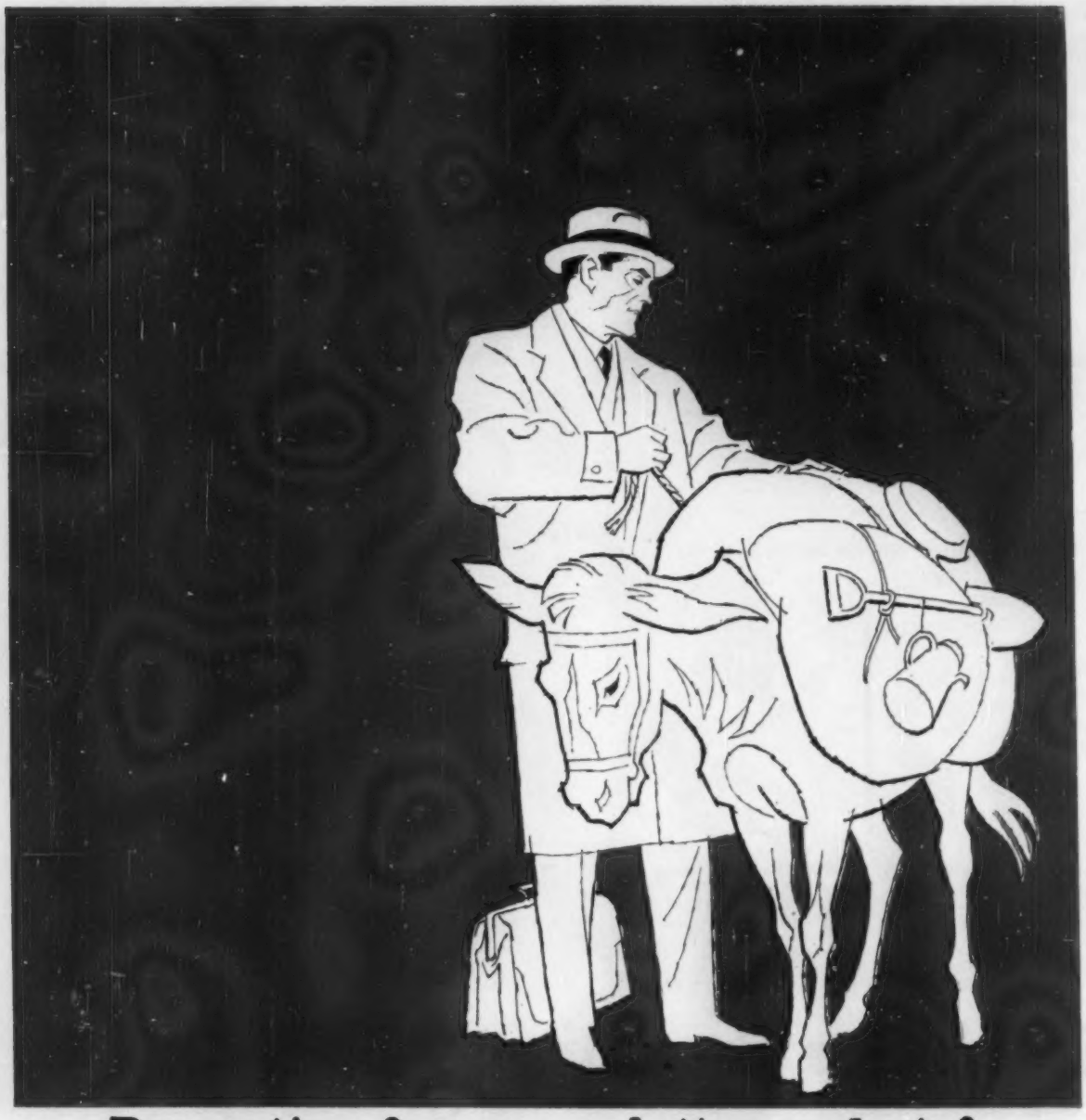
• **Trained Thinking**—Value analysts are trained to think along these lines. This viewpoint is more important than technical knowledge.

"No man could be greener in Value Analysis than I was when I came to Boeing in 1957," says Clarence Black, the company's VA director. "I didn't know a forging from a casting, but I did know how to ask questions, and that's the first requisite of an analyst."

For companies setting up an analysis program, Black suggests a three-pronged attack: (1) get strong management support; (2) solicit wide employee participation; (3) choose analysts carefully.

Black has been educating Boeing buyers for the past three years. He asks them to come to his department whenever they question the ratio of cost to function; believe that a standard item might be substituted for a special; doubt the need for high specifications; see a possibility of reducing inventory through standardization.

Value Analysis most often is aimed at reducing cost. But not always. An analyst sometimes recommends that a component be replaced by a more expensive one: the higher-priced component may perform the function more reliably, or it may perform more functions than the original part. ●



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IMD-10

Technology in Brief

Oxygen and Copper: Oxygen soon may be as important to the copper industry as to steel (see page 19). Several U.S. companies now are studying the advantages of oxygen smelting of copper. One of them, Kennecott Copper Corp., plans to build a $750,000 pilot plant to test its process. Copper producers can use oxygen in two ways: (1) an oxygen lance can remove such impurities as sulfur; (2) as a combustion aid, oxygen can help a burner to produce furnace heat in a shorter time (*Chemical Week, Aug* 20, *p*68)

Tritium Dials: Clock faces soon may be lighted with tritium, the radioactive isotope of hydrogen. Tritium costs less than radium and it is safer: It gives off no penetrating gamma rays. Normally a gas, it can be incorporated in any one of several organic molecules for painting on dial surfaces. (*Product Engineering, Aug* 8, *p*6).

Speedy Roofing: Three men now can roof a factory or office building twice as fast as a larger crew used to take. The high-speed job is done by a new system developed by U.S.A.'s Flintkote Co. that uses an unusual three-nozzle spray gun. The center nozzle sprays glass-fiber roving, which is automatically chopped from a spool of fiber carried on the operator's back. The two outside nozzles spray a specially tailored asphaltic roofing compound. Together the three nozzles produce a strong, monolithic covering. Cost of the new-type roof, according to Flintkote, is about 24% less than a conventional roof. The technique also is being considered for lining tanks, storage ponds, ditches. (*Factory, Aug, p*95)

Automated Smelting: Soviet specialists have worked out a system, apparently the first in history, for automating the process of steel smelting in arc furnaces. Tass reports that the process increases the capacity of furnaces by 35%, cuts down electricity use by 15%, and improves the quality of the steel. The automation system consists of a series of electronic devices for

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Food
Glass
Insecticide and Fungicide
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Leather
Lithographing
Linoleum and Floor Covering
Lubricant
Match
Metallurgical
Metal Working
Oil Cloth
Optical
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PAINT, VARNISH, AND PLASTIC—Naphthenate Driers and other Metallic Soaps (Linoresinates, Octasols, Resinates, Soyates)—Cadimum Lithopones—Pigments—CP Cadmium Pigments—Mercury Cadmium Pigments—Antimony Oxide—Organic and Inorganic Dry Colors and Dispersions—Vinyl Stabilizers.

ELECTROPLATING—Nickel Salts: Sulfate, Chloride, and Carbonate—Nickel Anodes—Cadmium Oxide—Bright Nickel Electroplating Processes.

CATALYTIC PROCESSING—Preformed Catalysts—Boron Trifluoride—Hydrofluoric Acid—Nickel Formate—Rufert Nickel Catalyst Flakes (for vegetable oil hydrogenation).

MISCELLANEOUS—Hydrofluoric Acid—Ammonium Bifluoride—Miscellaneous Fluorides—Copper Chloride—Copper Oxide—Copper Naphthenate—Cobalt Sulfate and Carbonate—Manganese Carbonate—Cadmium Oxide—Synthetic Crystals (Optical, Scintillation, Electronic).

Shipment of the products listed above is at present subject to the availability of raw materials.

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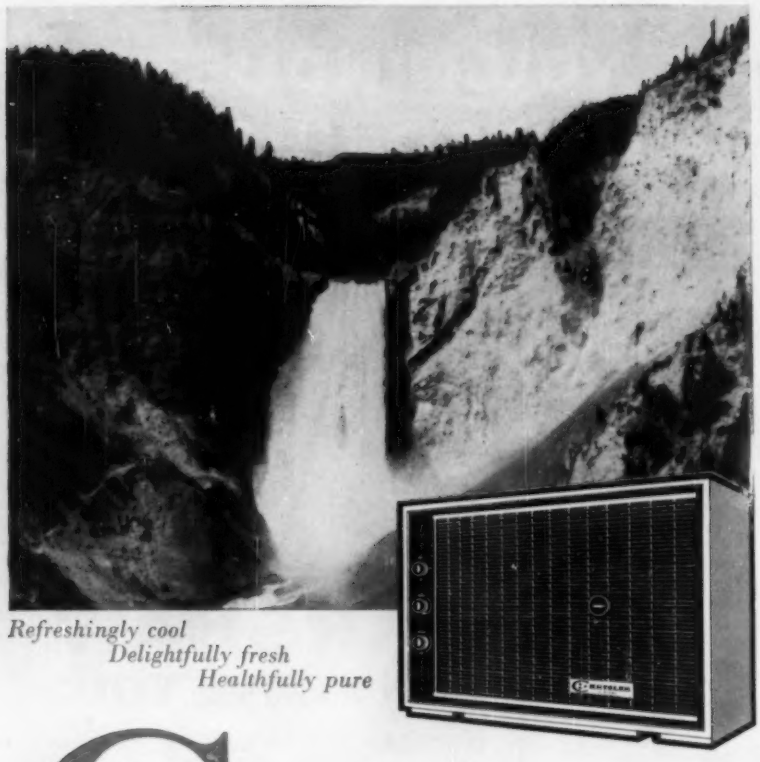

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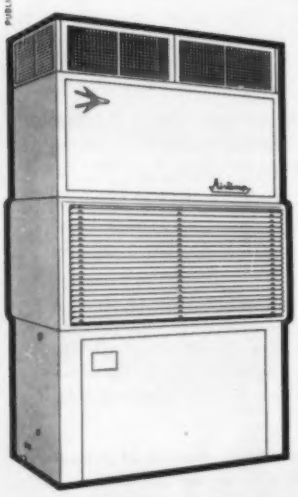

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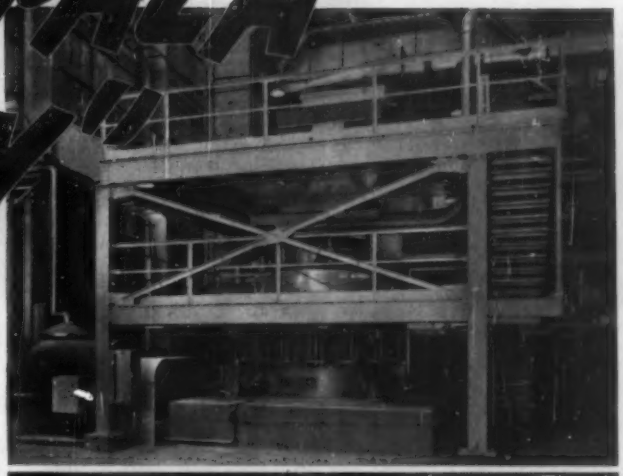
measuring electric, thermal, and physical-chemical parameters. Some of these devices have already been tested in industrial furnaces and are being put to use.

Graphite Binder: The production time required to make strong, dense graphite is reduced from a conventional 90 days to less than two hours with a synthetic binder developed by U.S.A.'s Armour Research Foundation. The binder eliminates the baking stage required in normal graphite production. Graphite made with the new binder has been tested at temperatures of 3300 C by the U. S. Atomic Energy Commission, which plans to use the graphite in high temperature atomic reactors. (*Chemical Week, Aug* 6, *p*63)

Buildings Go Fast: Buildings are demolished faster, and with less noise and dust, by the "powder-lancing" technique developed by Linde Co., U.S.A. The technique cuts through concrete and other materials by burning powdered metals in oxygen. Hoses connect a length of black pipe to a supply of oxygen and a supply of iron and aluminum powder. To get through a wall, the end of the pipe is heated with a welding torch; then the powder and oxygen mixture flows through the pipe and ignites. The hot flame and alumina and iron oxide particles will cut through almost any material, according to Linde. (*Business Week, Aug* 20, *p*53)

Pooled Research: Britain is forcefully pushing a program of cooperative research between industry associations to utilize its resources and talents most efficiently. A recent report of the Department of Scientific & Industrial Research reveals that Britain now has 50 government-aided research associations, each to some extent working with the others. The report highlights three areas—metal fatigue, metal creep, shipbuilding—where combined research programs are in progress. Britain's government-aided associations last year spent over $20-milion, an increase of $1.1-million over 1958. Most of the funds came from private industry, though the government's share was raised $840,000 to $4.7 million. (*Electronics, Aug* 26, *p*44)

Nordberg Machinery plays important part in the "TOQUEPALA STORY"



The huge Southern Peru Copper Corp. open pit copper mine at Toquepala, Peru, is one of the major new mining projects of this decade. It is now in production, after more than five years of planning and development through the combined efforts of four large metal mining companies. Each of these companies have used Nordberg Machinery in their far-flung mining operations.

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Six Symons Cones handle secondary and tertiary crushing at the big Southern Peru Copper Corp. plant. Two of these are Standard units, and four are of the Short Head type.

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Five Nordberg 4-cycle diesel-generator units are installed at the mine, 10,600 feet above sea level. Each of the 8-cylinder Nordberg supercharged engines is rated 1830 horsepower, 1295 kilowatts at their installed altitude.

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An extensive railway system serves the Toquepala mine facilities. Nordberg equipment used in laying rail included Power Jacks, Power Wrenches, Rail Drills, and a Hydraulic Spike Puller.

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The Vairo brothers*: natural partners for the International Finance Corp.

IFC Builds Its Portfolio

THE BROTHERS VAIRO (above), of El Salvador, had a problem. It was one shared by countless thousands of smaller family enterprises throughout the world, all of them grappling with the problems that come with industrial expansion, increasing competition, new management and production techniques, and changing consumer tastes.

The problem is new capital for expansion, for modernization. Big businesses usually have no trouble, but smaller firms, and especially those in less-developed nations, often find that investment capital is just not available. And even when it is, it sometimes comes on terms that the small enterprise will not accept.

• **Mission**—This is why the International Finance Corporation was set up four years ago this month in Washington. Its mission: to encourage private investment by joining with private partners, without government guarantees, to expand established industries, and to start new ones, in less-developed areas (IMD—Jan.'57,p15).

The Vairos' textile business is one that has been encouraged to expand with an IFC investment. It is one of 30 enterprises that have benefited from a total IFC investment of some $30-million, which in turn has lured a good deal more private money out of hiding. Some of the most recent IFC investments are listed on the facing page. Like the Vairo venture, they hold out the prospect of profit—for the companies themselves, and for the IFC.

• **Problem**—One of IFC's problems is that too few potential borrowers even know of its existence. And of those that do, some think that it is an agency for dispensing "foreign aid." IFC officials ruefully admit that their mission is frequently misunderstood, that their demands—largely dictated by the IFC charter—are sometimes misinterpreted. IFC President Robert Garner notes a "natural reluctance" on the part of some businessmen to accept the restrictions and to divulge the information that go with investment banking.

By its nature, investment banking is demanding, often "hard-hearted." Like its parent, the World Bank, IFC is loath to relax any of the rules of sound financial practice. IFC insists that a company be in good financial order before committing itself; it insists on safeguards to protect its interest. No wonder, then, that there is likely to be frustration when IFC gets together with clients unfamiliar with investment banking.

Yet because IFC's mission is to encourage private enterprise—and not to make money for the partners of a commercial firm—it tries to be persuasive when a private investment banker might be adamant.

• **Review**—Last month, the IFC Board of Governors met in Washington to review the problems and the agency's progress in meeting them. While it has made progress, IFC has not lived up to the expectations of its sponsors, the member nations of the World Bank who put up $78-million to get it started. After four years, less than half the fund has been committed.

It was against this background of review that INTERNATIONAL MANAGEMENT set about tracing the course of an IFC investment.

I. Meet the Vairos

On June 1, 1959, the Vairo family was introduced to the world of finance in an IFC press release:

"Robert L. Garner, President of the IFC, announced today that the Corporation has agreed to invest $140,000 in Industrias Textiles, S.A. (INTEXSA), of San Salvador, El Salvador, for expansion of production and to improve the quality of knitted textiles. INTEXSA is an associated company of the Vairo Hermanos Co.; Sr. Pascual Vairo is President of INTEXSA.

"The Vairo Hermanos Co. was formed in 1946 and has been a family partnership of the three Vairo brothers. INTEXSA was organized as a corporation in 1959 to attract capital from outside the family partnership."

• **First Contact**—The story of how the IFC got together with the Vairo family begins in June, 1958, when an IFC investment officer was sent to Central America on what was frankly a scouting mission to find business.

Before they were approached by this man, the Vairo brothers admit they had never heard of the IFC. But from the information he supplied, they were indeed interested in the agency's program.

For some time, the family enterprises had been "hemmed-in" by short-term credit. This credit was equal to their day-to-day needs. It was strictly 90-day credit, however, and the brothers had ambitious ideas about expansion.

But before negotiations with the IFC could get underway, the "scout" left the organization. A long and tortured exchange of letters with Washington followed,

* Left to right: Pascual Vairo president of Industrias Textiles, S.A., Rafael Vairo, production manager, Dr. Julio Millan B., manager of distributing company, Salvador Vairo, chairman.

equally frustrating to both parties.

Negotiations got back on the track in the winter of 1958, quite by chance. A young IFC loan officer, Wolfgang Weigel, was spending the Christmas holidays in Costa Rica; and at the request of Washington headquarters, he visited the Vairos in San Salvador.

"The operation looked good to me," Weigel recalls. "I liked the Vairos. They were cooperative, their plant was well run, they seemed to have no labor troubles, and their product seemed to be of high quality." Weigel got good credit reports from the commercial banks, and checked the local reputation of the Vairo family. It was excellent.

Investigating the competitive situation, Weigel reported that the half a dozen competing mills had total sales of only $40,000 a year, far below the Vairos' $300,000. In turn, the combined domestic production was far below annual Salvadorean imports of $1.8-million worth of competing textiles. The total market was growing 3% to 4% a year. As a final check, Weigel talked to the importers. In almost every case, they were also wholesalers of Vairo products, and would be happy to see a local organization expand. Furthermore, the domestic product was cheaper.

• **Agreement**—From the beginning, the Vairos were aware that incorporation would be necessary to attract outside capital. In discussing reorganization plans, the IFC insisted on a formal separation of Vairo interests. Besides textiles, the family was involved in a local plastics undertaking and were agents for an Italian sewing machine. A Vairo brother-in-law was a successful architect and home builder.

Industrias Textiles, S.A., was incorporated in April, 1959; the deal with IFC was completed in May. Because a new corporation was being formed, the brothers actually deposited money in the bank to cover the par value of the stock they received. The company was capitalized at $600,000, with 15,000 shares worth $40 each.

By its charter, the IFC is prohibited from actual ownership of enterprises. For this reason, its participation is rather complicated. Its investment of $140,000 is in U.S.

Where IFC Money Goes

International Finance Corp., the World Bank's unique private investment arm, is rapidly increasing its lending operations. Here are nine recent examples of IFC at work.

FINLAND textiles — $156,000, repayable in dollar notes by 1968, to Tricol Oy and Oy Kutumotuote Ab, textile group, for an $825,000 expansion. Finnish banks are putting up $500,000, the company $175,000. IFC notes at 6.75%.

AUSTRALIA rubber — A $90,000 investment in Rubbertex Pty. to increase rubber and synthetic products output, and add new lines. IFC notes at 6% payable in dollars; IFC also has profit share and stock option in Australian pounds.

TANGANYIKA sugar — A $2.8-million share (half dollars, half sterling) in Kilombero Sugar Co. Part of investment is in 7% debentures; the rest in convertible income notes. British and Dutch investors are involved too. IFC's first African venture.

INDIA brick — A $1.365-million stake is Assam Sillimanite to expand output of refractory brick, reducing import dependance. IFC dollar notes bear 6.5%, also stock option and profit-share. Additional stock sales to public.

ARGENTINA pulp — A $3-million investment in a new pulp mill for Papelera Rio Parana. IFC dollar notes at 7% interest (plus profit share and stock option). Local investors and a Swedish firm will invest another $2.3-million.

VENEZUELA steel — $3-million to expand and diversify the electric furnace steel mill of Siderurgica Venezolana. A local bank and new stock issues will complete $6.3-million project. IFC interest at 7%, plus profit share.

PERU materials — $300,000 into a new building material company, Durisol de Peru, which uses vegetable fiber and cement. Private owners will put up $500,000. IFC charges 7%, payable in sols, and also will get extras.

appliances — A $250,000 investment in Industrias Reunidas, a Peruvian household appliance manufacturer, to expand output. IFC gets 6% interest, repayable in sols, plus stock and profit share. Local shares to be sold.

ITALY equipment — $960,000, repayable half in dollars, half lire, for Magrini Meridionale's $3.5-million circuit breaker plant in southern Italy. 6% lire interest contingent on profits. Owners and local investors involved.

dollar notes bearing interest at 7%, maturing within 10 years. In addition, the IFC will take 20% of the profits for two years, with this figure tapering off over the years.

The IFC also has an option to subscribe, at par value, to up to 2,250 shares, or 15% of the outstanding stock. When the investment matures, the IFC will sell these rights to third parties, thus spreading ownership in the company.

On their own, however, the Vairos offered shares in INTEXSA to "stock buyers who also offered ideas." Several prominent Salvadorean businessmen have been brought into the corporation. These new board members own 13.33% of the outstanding shares; and the Vairos say they are willing to sell up to 16% more, which would leave them with 55% control. Under the agreement with IFC, the brothers can sell all the shares they please, as long as they do not give up controlling interest.

II. How Much Change?

In terms of management theory, the Vairo enterprises have been transformed into a corporate complex that functions—and can grow—in terms of organization rather than personality. The accounting system has been modernized, and a public accounting firm has been retained to audit the books. Company operations are now summarized in reports that are as meaningful in Washington as in San Salvador.

From the Vairos' standpoint, however, there has been practically no operating change. Pascual Vairo puts it this way: "Our administration has been aided by the auditing firm, but substantially it has remained unchanged in all its aspects; the same personnel who were working before the financing transaction are still working now."

Industrias Plasticas, S.A., in which the Vairos own a 50% interest, was already a separate corporation (it is Central America's largest producer of plastic tubing, polyethylene film, and glass fiber products). Salvador, the eldest brother, is president of the plastics company, chairman of the textiles company. Pascual, the middle brother, is president of the textiles company.

The IFC negotiators would have preferred separate sales organizations for the two companies—because their investment is only in textiles. But they agreed to Rafael, the youngest brother, serving as vice president, sales, in both. He has since become production manager.

A year ago, the Vairos formed an independent distributing organization, Distribuidora de Fabricas, S.A., to sell both textiles and plastics. The local market is too small for separate sales companies, and the wholesale customers tend to be the same for both products. President is Robert E. Daglio, a member of a leading San Salvador family. To this organization will go the job of exploiting the Central American Common Market, as it comes into being. Business contacts have already been established in all the countries. To check on INTEXSA export possibilities, IFC negotiators went to the planners of the Central American customs union, who gave their blessing to the Vairo expansion.

• **Optimistic**—With the IFC investment now almost fully turned into new machinery, working capital, and inventory, the Vairos are bursting with optimism. Textile sales, running 30% ahead of last year, are expected to double by 1962. In addition, the brothers are plotting further expansion. They intend to go into nylon products; they have already bought $50,000 worth of machinery, and are building a second floor to the mill.

Next will come a spinning mill. Customers for cotton yarn have been lined up, and the Vairos are now exploring financing.

III. The IFC's Mission

Better than any policy statement, the story of the Vairo brothers tells what the IFC is doing, and how it goes about it. And the case shows some of the reasons why the agency's work has not moved faster. But IFC officials are proud of their accomplishments.

Some of these accomplishments will not bear fruit for several years. The IFC is now building a portfolio of stock options and subscription rights. As these rights mature, they will be sold on local markets. This will spread the ownership of IFC-aided interprises, help build capital markets in countries that have none. IFC President Garner says he is already impressed by the success of equity issues stimulated by IFC loans.

Some critics have noted that the IFC is strictly a "dollar" agency. This is true—its capital is all in U. S. dollars. But it is also true that Garner has asked his Board for a fund of other currencies, without success. In a few investments, the IFC is accepting some of the repayment—or its profit share—in the local currency (see examples on preceding page).

• **Policy Changes**—Over the past couple of years, the IFC has made many changes in its operations. It is moving into new areas of financing, such as the Tanganyika project involving agricultural development.

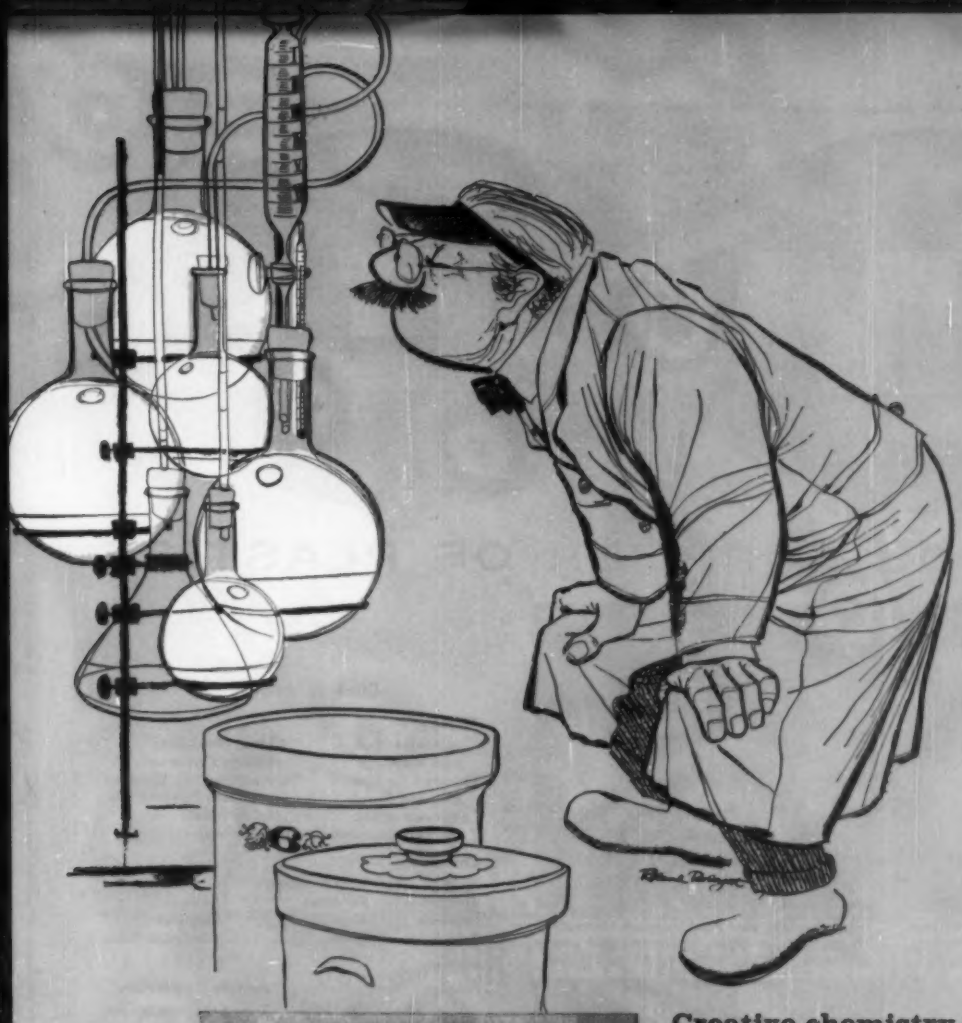
And the IFC has become aggressive in its search for investment opportunities. In the beginning, the agency made few scouting missions, such as the one that turned up the Vairo brothers. In the past year, agency staff men have visited 30 countries inspecting projects; there were two long good-will trips to Southeast Asia.

The agency has become more flexible in its policies. But officials are still concerned that the agency's investment techniques are not fully understood. Its investment pattern is unusual, and negotiations involve complicated combinations of debt-equity financing.

Take the case of the "income note," a debt obligation that is tied to profits. For the IFC, the income note introduces an "equity-type" feature that is in keeping with its mission to encourage the profit motive, and that provides greater flexibility for IFC negotiators. For a company, the income note means a reduced burden of fixed charges. After negotiations with a fertilizer company in Peru, the IFC was proud to announce that half its investment was in income notes that carried no fixed interest charge. Yet the reaction of some potential borrowers was hostile; there have been mutterings of "profit participation without equity representation." Agency officials are beginning to realize this sad fact: The more flexible the IFC becomes, the more complicated its investments tend to be—and the greater the educational job it will have to do. ●

Monsanto

Basic Source of Oil Additives



Creative chemistry is a smoother running engine.

It's longer life for motor oil. It's reduced wear of engine parts. It's increased engine efficiency—smoother performance on less gasoline. All because chemical additives fortify base oils to help them disperse dirt, hold it in suspension, inhibit corrosion, stabilize pour point. Monsanto is a world leader in the development and improvement of oil additives whose performance has been proved both in Monsanto's engine laboratory and in exhaustive field service. A complete portfolio of products manufactured . . . world-wide marketing facilities . . . capable technical service to assist buyers in the use of each product all have helped make Monsanto a leading supplier of oil additives throughout the world.

MONSANTO CHEMICAL COMPANY,
ST. LOUIS, MISSOURI, U.S.A.

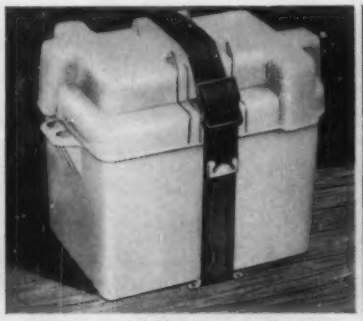
Monsanto

Dependable service from Monsanto companies in London, Paris, Tokyo, Melbourne, Montreal, Bombay, Mexico, D.F., Buenos Aires and from sales representatives in all principal cities of the world.

Where Creative Chemistry Works Wonders for You

AMCEL

WORLDWIDE SUPPLIER OF PLASTICS



Tough, lightweight, shatterproof marine battery case of Fortiflex plastic. Resists battery acids and salt water attack.

Lightweight pool boat vacuum formed from Fortiflex sheet. It's unsinkable and unbreakable. 5½' long, 3½' wide, 2' deep.

Colorful, rigid, smartly designed mixing bowls to fit any decor and High chair, with easy to clean tray of Fortiflex plastic.

Hinge molded in colorful, lustrous, super-strong Fortiflex—corrosion-free, mildew-proof, and resists detergents or boiling water.

Fortiflex . . . One of the family of Amcel plastics

Fortiflex, a new type of polyethylene, differs greatly from previous polyethylenes: This plastic is hard, rigid, unbreakable—not soft and flabby—and it can withstand boiling water. Fortiflex has a smooth, lustrous surface; it comes in rich colors and is so lightweight that it floats. Economical, too!

No wonder Amcel Fortiflex is creating a revolution in housewares, in toys, in parts for industry, in bottles and containers for packaging! Amcel representatives throughout the world will be glad to show you just how important this plastic can be in making better products and achieving economies in design and production.

Amcel, Arnel, Type F, Type K and Fortiflex are trademarks.

Look to Amcel for:

Plastics

- Cast Acetate Film and Sheet
- Extruded Acetate Film and Sheet
- Cellulose Acetate Molding Compounds
- Cellulose Propionate Molding Compounds
- Polyvinyl Acetate Emulsions
- Low Pressure Polyethylene Molding Materials
- Polyester Resins

Chemicals

- Acids
- Aldehydes
- Lactones
- Polyols
- Vinyl Monomers
- Acrylates
- Alcohols
- Esters
- Glycols
- Ketones
- Plasticizers
- Functional Fluids

Fibers

- Acetate (filament, staple, spun)
- Arnel Triacetate (filament, staple, spun)
- Solution Dyed Acetate
- Type F Acetate Staple
- Acetate Carpet Fiber
- Type K Acetate Staple
- High Tenacity Rayon
- Rayon
- Cellulose Acetate

AMCEL AT YOUR SERVICE IN:

- Australia
- Austria
- Belgium
- Burma
- Ceylon
- Denmark
- Egypt
- England
- Finland
- France
- Greece
- Holland
- Hong Kong
- India
- Israel
- Italy
- Japan
- Korea
- Lebanon
- Mexico
- Morocco
- New Zealand
- Norway
- Pakistan
- Philippines
- Portugal
- Rhodesia
- South Africa
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AMCEL CO., INC.

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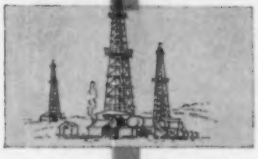

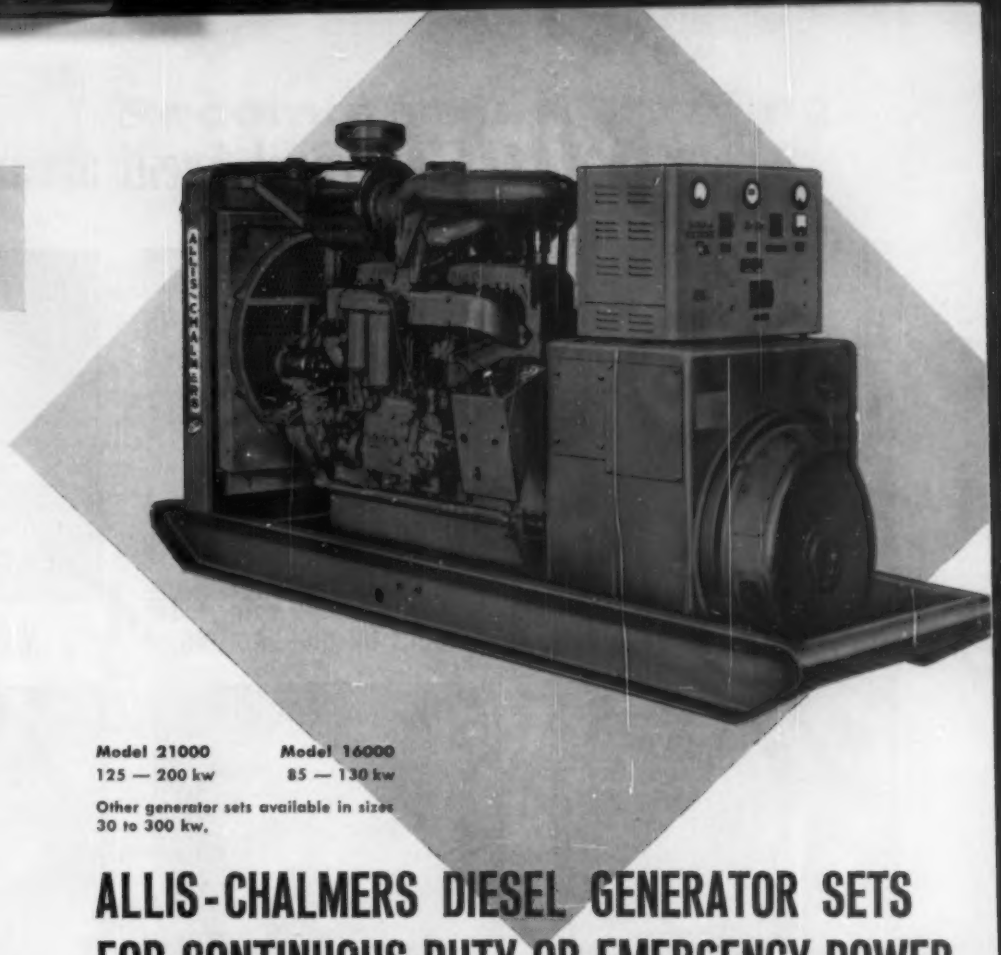

Model 21000 125 — 200 kw

Model 16000 85 — 130 kw

Other generator sets available in sizes 30 to 300 kw.

ALLIS-CHALMERS DIESEL GENERATOR SETS FOR CONTINUOUS DUTY OR EMERGENCY POWER

Only Allis-Chalmers manufactures *complete* generator units — modern diesel engines, proved brushless generators, electrical controls and switchgear. This assures coordinated engineering, balanced performance, undivided responsibility. Wherever dependable electric power is needed... for continuous or stand-by service in hospitals, hotels, office buildings, factories, ships, or for operations in remote areas... Allis-Chalmers generator sets meet the most exacting requirements.

Quick Starting

Modern diesel engines, noted for their extreme fuel economy, start quickly and pick up loads in 8 to 18 seconds. Also available, equipment which instantly and automatically starts generator functioning following failures of commercial power.

Unequaled Electrical Reliability

The brushless generator has no slip-rings, no brushes, no commutators to wear. There is minimum radio interference; no danger of sparks that might ignite combustible fumes.

Automatic Voltage Regulation

The Allis-Chalmers automatic, static-type voltage regulator has no moving parts or contacts. No parts to burn or wear. Unequaled quick response to sudden changes in load protects sensitive apparatus, easily picks up heavy starting loads.

Easy to Install

These sets are simple, unit-type, self-contained. They are mounted on heavy skids — no special foundation is required, no danger of misalignment. Simplified electrical connections speed installation and reduce related costs.

For complete information, consult the Allis-Chalmers Engine Distributor in your area.

ALLIS-CHALMERS INTERNATIONAL,
Department MD1060, Milwaukee 1, U.S.A.

ALLIS-CHALMERS

BUILDERS OF MACHINERY SINCE 1847

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Tickets for teenagers

Tours for globetrotters

Visas for visitors

Currency for financiers

Trips for typists

Hire cars for holidaymakers

Hotels for honeymooners

Stopovers for sightseers

Baggage for families

or any cargo anywhere

Look for this sign B·O·A·C AGENT **–he takes good care of you**

B R I T I S H O V E R S E A S A I R W A Y S C O R P O R A T I O N

McGRAW-HILL INTERNATIONAL MANAGEMENT'S

Recommended Reading

NEW BOOKS

What are "standards of performance?" Can they be set for executives? How can they be used effectively? These and other questions are discussed in SETTING STANDARDS FOR EXECUTIVE PERFORMANCE, by John W. Enell and George H. Haas. A group of case studies is included. *American Management Assn., 1515 Broadway, New York 36, N.Y., U.S.A.* $3.75.

INDUSTRIAL DEVELOPMENT: A GUIDE FOR ACCELERATING ECONOMIC GROWTH, by Murray D. Bryce, is the first practical manual on selecting, preparing, analyzing and appraising industrial projects (see IMD—Aug, p16). The book covers recent developments in the sources of financing, and reviews the factors concerning forms of ownership and management which may affect the success of industrial projects. *McGraw-Hill Book Co., 330 West 42nd Street, New York 36, N.Y., U.S.A.* 304 *pages,* $7.50 *or* 58*s.*

For a clear understanding of either "high" finance or "low," read H. B. Rose's THE ECONOMIC BACKGROUND TO INVESTMENT. Emphasis is on working finance: rudiments of company law and accounts, capital market, interest rates and security prices, and the banking system. *Cambridge University Press, Bentley House, 200 Euston Road, London NW1, England.* 672 *pages,* 40*s or* $5.60.

THE MEN FROM THE BOYS, by Perrin Stryker, provides a fictional analysis of managers—from the clumsily incompetent to the smoothly efficient. A collection of imaginary dialogues, letters and memos portray management in action. Entertaining—as well as instructive. *Harper & Brothers, 49 East 33rd Street, New York 16, N.Y., U.S.A.* 237 *pages,* $3.95.

A EUROPEAN GUIDE TO GENERAL COURSES IN BUSINESS MANAGEMENT has been published by the European Productivity Agency, giving detailed information on subjects, teaching staff and research teams, number and grading of students, teaching methods and equipment. *Organization For European Economic Corporation, 2 Rue Andre-Pascal, Paris 16°, France.* 675 *pages,* $4.50 *or equivalent.*

DIRECTORIES, REFERENCES

Just published: THE McGRAW-HILL ENCYCLOPEDIA OF SCIENCE AND TECHNOLOGY. This new reference work—written by the world's leading scientists and engineers—offers concise factual data on the basic concepts, terminology, and latest developments in every major field of pure and applied science. The 7,200 articles are illustrated with drawings, maps, photographs, and diagrams; there's a cross-reference index containing more than 100,000 entries. The encyclopedia will be kept up-to-date with a Yearbook of Science and Technology. *McGraw-Hill Book Co., 330 West 42nd Street, New York 36, N.Y., U.S.A. 15 volumes, including index,* 9100 *pages,* $175.00 *or* £67 16*s.* 6*d.*

The 1960 DIRECTORY OF HONGKONG is a guide to trade and industry in this busy, competitive Colony. There is useful trade information, listings of local manufacturers, processers, and traders. *Department of Commerce and Industry, Hongkong.* 159 *pages.*

For Nigeria, this is the month of independence. For information about business opportunities in this new nation write for a copy of COMMERCE IN NIGERIA. *Lagos Chamber of Commerce Inc., P.O. Box 109, Lagos, Nigeria.*

Selling to East Africa? The 1959-60 EAST AFRICAN DIRECTORY provides up-to-date information about business and industry in Kenya, Uganda, Tanganyika, and Zanzibar. It lists nearly 10,000 firms, including importers and merchants. *East African Directory Co., 3rd Floor, New Stanley House, Nairobi, Kenya, East Africa.* 1000 *pages,* $9.00 *or the equivalent.*

The Statist of London has published an interesting survey on the economic development of ten Latin American republics. Copies of this ECONOMIC SURVEY OF SOUTH AMERICA can be obtained from *The Statist, 51 Cannon Street, London EC4, England.* 208 *pages,* $1.58 *or* 11*s* 3*d.*

REPORTS, PAMPHLETS

Planning a business in the Netherlands? De Twentsche Bank's 1960 survey will provide information on procedure, corporate structure, finance, foreign currency regulations, foreign trade, taxes, social security, and other benefits. *De Twentsche Bank, Spuistraat 138-150, Amsterdam, Netherlands.*

GUIDING METROPOLITAN GROWTH (see page 16)—a report published by the Committee for Economic Development in the U.S.A.—presents the steps that must be taken to shape metropolitan areas into efficient and attractive communities. The report discusses population growth, urbanization, suburban needs, transportation, air and water pollution control, industrial development. *Committee For Economic Development, 711 Fifth Avenue, New York 22, N.Y., U.S.A.* 56 *pages,* $2.00.

MARKET RESEARCH ON A EUROPEAN SCALE sets out to answer marketing questions about EEC and EFTA; lists marketing research firms operating in Europe; gives specific examples of assistance offered by trade organizations and by the Common Market. *Organization For European Economic Cooperation, 2*

Rue Andre-Pascal, Paris 16°, France. 126 pages, $2.00 or the equivalent.

Two timely talks on marketing: BUSINESS LEADERSHIP AND SOCIAL RESPONSIBILITY, by Gottlieb Duttweiler, outspoken head of the Migros Cooperatives in Switzerland, relates his philosophy of giving "more for less." And America's Daniel Bloomfield, in THE ADVANCE OF MARKETING AND DISTRIBUTION IN A CHANGING WORLD, depicts the future pattern of marketing in the U.S., from motivation research to standards of conduct in competitive enterprises. Both contain 30 pages, cost $0.50, and are available from *Michigan State University, Bureau of Business and Economic Research, East Lansing, Mich., U.S.A.*

[INDUSTRY BULLETINS]

COORDINATED MATERIALS HANDLING illustrates new techniques and applications of one company's handling equipment in warehousing, manufacturing, and other areas of industry. *The Rapids-Standard Co. Inc., 342 Rapistan Bldg., Grand Rapids 2, Mich., U.S.A.*

VISUALIZATION MADE EASIER WITH CHART-PAK tells how professional-looking charts, graphs, maps, and layouts can be made with the help of pressure-sensitive tapes, templates and symbols. *Chart-Pak Inc., Leeds, Mass., U.S.A.*

Personal Business

Trends in Life Insurance

New developments in life insurance spread around the world much faster than they used to. To bring you up to date, here are some recent trends:

Everywhere, there is greater emphasis on life insurance as protection—insurance against future earning power—rather than as a form of saving. This means the trend is away from endowment policies, toward a combination of endowment and term (payable at death within specified period), or toward straight life.

The most popular new policy offered in recent years is "family plan" insurance, which appeals strongly to the younger married man. While details vary from country to country, a typical U.S. policy gives $5,000 coverage to husband, $1,000 to wife and each child.

The limit is usually about $15,000 for the husband, $3,000 for each dependent. As new children are born, they are automatically insured at no extra cost.

The husband's coverage is straight life; the wife's and children's is term insurance. At age 21, the children's policy can be converted to straight life without a physical examination. Cost of a family policy averages 2% more than a policy on husband alone.

The "jumping juvenile" clause is another recent development. Under these plans, you buy a policy on your child's life; and when the child reaches 21, the policy jumps to five times its original value, with no further medical examination. Many plans waive the premium after the father's death until the child is 21. The advantage of such a policy, besides the lower rate, is that it guarantees your child will be insurable when he matures.

You should note the world-wide trend toward liberalization of "extra-risk" insurance. In Europe, for instance, actuarial studies by the "Cointra" group of 10 insurance companies, representing eight countries, has greatly extended the scope of life insurance coverage.

Heart disease is still the Number One cause of rejection. But if you have had a heart attack, your chances are good for coverage if you have had a recovery period with no recurrence. After one to three years, the extra premium is high, perhaps as much as $25 per thousand. But after 10 years, the rate may drop to an extra $5 or so.

High blood pressure is regarded in much the same light. High blood pressure plus obesity, however, might run extra premiums as high as $50 per $1,000. People who have suffered tuberculosis or cancer operation are also being insured; after a long period of non-recurrence, some are getting standard rates.

For high-risk jobs, an extra premium of $10 per thousand is now considered on the high side. Owners of private planes now often pay standard rates.

Higher age limits are being allowed on new policies. Many U.S. companies now insure people who are 65, and in some cases, 70 years old.

Two other innovations: triple indemnity for loss of life while traveling by public transportation; lower premiums for women (age rate is lowered three years).

How much insurance a man should have depends on too many personal factors for there to be any hard and fast standard. Advocates of life insurance give only this rule of thumb: If you do not have at least four to five times your annual income, you would do well to review your needs with an insurance agent.

Worried about your cigar supply?

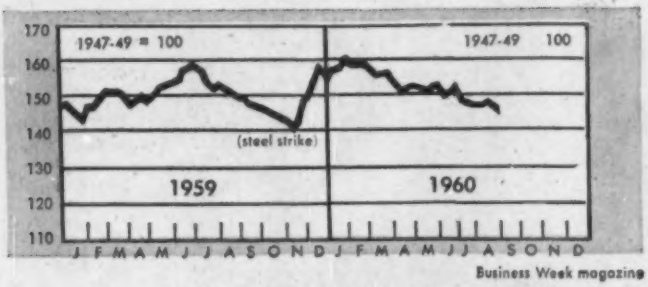
With Cuban politics boiling, businessmen are casting a nonpolitical eye on their cigar supply.

In regular thin boxes, cigars are good for only about 60 days. If you like Havanas, you might feel calmer with a humidor filled with several hundred cigars.

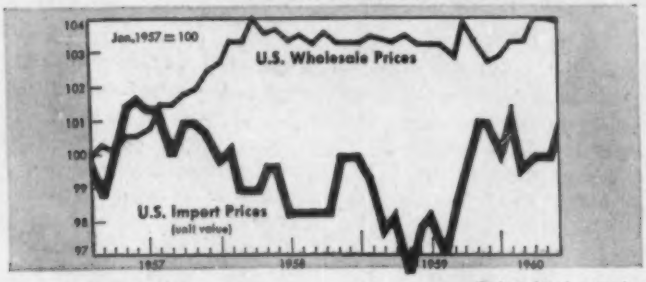
You can have a cabinet maker build one. Specify walls of hard wood, with cedar lining the inner sides and "milk" glass covering the inner top and bottom. Small moisture units go inside.

The best Cuban cigars, incidentally, cannot be judged by size, shape, or color.

Business at a Glance



Business Week magazine



Business Week magazine

U.S. Business Trend

There are many who insist an American recession is already in train; a look at the index of business activity (left) seems to bear them out. But business was heavily influenced by seasonal factors, and the summer "sag" was more pronounced this year because of steel's unprecedented slow-down. It's hoped accelerated government spending and easy money (page 15) will stimulate an upturn. But fingers are crossed.

U.S. Price Trend

U.S. producers are gaining some ground in home-market competition with foreign suppliers. The chart shows how the average unit price of finished-goods imports has risen while made-in-U.S. items have held steady. U.S. companies have been fighting hard to hold the price line – and they have gotten help from the industrial and consumer boom abroad which has forced higher costs, and prices on foreign competitors.

A QUICK REVIEW OF EXCHANGE, CREDIT, AND BUSINESS CONDITIONS

Country	Exchange Rate (units per $1, New York)			Government Reserves (gold & foreign exchange, millions)		Dollars in U.S. Banks	Conversion Delays / Collection Experience		Business Conditions
	1 September, 1960		4 August, 1960	Latest Month	October, 1959	(Millions)			
Argentina	82.00	Peso	80.00	$ 539.0	$ 296.0	$ 388.0	2 Mos.	Fair-Good	Fair-Good
Australia	* 2.23	Pound	* 2.23	1,226.0	1,173.0	114.0	None	Very Good	Good
Austria	25.64	Schilling	25.31	682.0	724.0	198.0	None	Good	Good
Belgium	51.28	Franc	50.00	1,347.0	1,257.0	149.0	None	Very Good	Good
Bolivia	12,000.00	Boliviano	12,000.00	8.7	10.2	21.0	2 Mos.	Fair-Poor	Fair-Poor
Brazil	185.00	Cruzeiro	180.00	390.0	450.0	162.0	3 Mos.	Good	Fair-Good
Canada	.9708	Dollar	.9708	1,780.0	1,883.0	2,532.0	None	Very Good	Good
Chile	1.05	Escudo	1.05	112.7	126.7	144.0	2 Mos.	Good	Fair-Poor
Colombia	6.67	Peso	6.67	193.0	179.0	189.0	2 Mos.	Good	Good
Costa Rica	6.67	Colon	6.67	10.5	16.6	18.9	1 Mo.	Good	Good
Cuba	3.25	Peso	2.00	352.0	294.0	130.0	3 Mos.	#L/C Basis	Poor
Denmark	6.78	Krone	6.78	245.5	284.5	80.0	None	Very Good	Good
Dom. Rep.	1.01	Peso	1.01	45.1	39.7	35.0	None	Very Good	Fair-Good
Ecuador	16.67	Sucre	16.67	41.2	40.7	21.7	1 Mo.	Fair-Good	Fair-Good
El Salvador	2.50	Colon	2.50	36.2	34.6	31.0	1 Mo.	Fair-Good	Good
Finland	312.00	Markka	312.00	302.2	304.0	61.0	None	Good	Good
France	4.90	Franc	4.87	1,988.0	1,911.0	759.0	None	Good	Good
Germany	4.17	D-Mark	4.15	6,266.0	4,563.0	2,473.0	None	Very Good	Very Good
Greece	27.80	Drachma	27.80	222.3	195.0	112.0	1 Mo.	Fair-Good	Fair-Good
Guatemala	1.01	Quetzal	1.01	44.5	39.6	46.0	1 Mo.	Good	Fair-Good
Honduras	2.00	Lempira	2.00	14.2	15.5	12.8	1 Mo.	Fair-Good	Improving
India	7.10	Rupee	6.67	678.0	663.0	59.0	1 Mo.	Good	Good
Indonesia	200.00	Rupiah	200.00	370.0	247.0	155.0	---	#L/C Basis	Poor
Iran	76.92	Rial	76.92	227.0	228.0	37.0	3 Mos.	Fair-Good	Good
Iraq	* 2.75	Dinar	* 2.75	295.6	337.1	18.0	2 Mos.	#L/C Basis	Fair-Good
Israel	2.22	Pound	2.22	185.1	121.2	80.0	1 Mo.	#L/C Basis	Good
Italy	617.00	Lira	615.00	2,863.0	3,230.0	1,060.0	None	Very Good	Good
Japan	380.00	Yen	380.00	1,505.0	1,209.0	1,441.0	None	Good	Good
Mexico	12.35	Peso	12.35	411.0	391.0	355.0	None	Good	Very Good
Netherlands	3.74	Guilder	3.74	1,481.0	1,353.0	412.0	None	Very Good	Good
New Zealand	* 2.65	Pound	* 2.65	301.0	266.0	6.8	None	Very Good	Good
Nicaragua	8.00	Cordoba	8.00	12.8	10.9	12.5	None	Very Good	Good
Norway	7.10	Krone	7.04	265.3	235.8	99.0	None	Very Good	Good
Pakistan	6.80	Rupee	6.80	390.0	290.0	23.5	2 Mos.	#L/C Basis	Fair
Panama	1.00	Balboa	1.00	37.9	45.7	116.0	None	Very Good	Good
Peru	26.66	Sol	26.66	52.6	55.4	77.0	1 Mo.	Good	Good
Philippines	3.30	Peso	3.30	143.0	83.0	197.0	1 Mo.	#L/C Basis	Fair-Good
Portugal	26.66	Escudo	26.66	773.0	797.0	88.0	None	Very Good	Good
South Africa	* 2.78	Pound	* 2.78	303.0	409.0	40.0	None	Very Good	Good
Spain	59.80	Peseta	59.25	54.0	54.0	149.0	---	#L/C Basis	Improving
Sweden	5.13	Krona	5.13	456.0	436.0	261.0	None	Very Good	Good
Switzerland	4.29	Franc	4.29	2,056.0	1,944.0	939.0	None	Very Good	Very Good
Turkey	11.90	Pound	11.90	262.0	266.0	19.0	---	#L/C Basis	Fair
U. A. R.	* 2.15	Pound	* 2.15	288.0	375.0	42.0	---	#L/C Basis	Fair
U. K.	* 2.82	Pound	* 2.83	2,996.0	3,024.0	1,534.0	None	Very Good	Good
Uruguay	11.11	Peso	11.11	100.0	180.0	60.0	2 Mos.	Poor	Fair
Venezuela	3.34	Bolivar	3.34	692.0	776.0	301.0	1 Mo.	Fair-Good	Good

*U.S. Dollars per Pound #Most Exports by Letter of Credit

McGRAW-HILL INTERNATIONAL MANAGEMENT'S

Last-Minute Memos

Turbines for the U.S.: Japan will be supplying its first heavy electrical generating equipment to the U.S. when Hitachi New York Ltd. delivers on its recently won contract to provide two 93,500-hp turbines to a California power plant. Another contract for turbines went to English Electric Ltd., while a third and fourth order went to two U.S. firms. Hitachi was low bidder on more than one contract, but U.S. government policy limits to a single contract any company that is supplying a large piece of machinery for the first time.

Dutch Welcome: Since World War II, 200 wholly-owned subsidiaries have been set up by foreign companies in The Netherlands, and 124 joint ventures linking Dutch and foreign concerns. In the past year, foreign subsidiaries increased by 17, joint ventures by five.

An Indian Car? India would like to have its own "people's car." A committee has been set to study: (1) whether the manufacture of such a car is feasible in the context of the country's present resources; and (2) if feasible, to select a suitable model in keeping with India's needs. Thinking is centered on a small four-seater that might cost a middle-class Indian family no more than 6,500 rupees (about $1,300) including taxes and insurance.

Latin American Chemicals: U.S. and European chemical companies are expanding operations in Latin America. Sun Chemical Corp. has broken ground for a pigment plant at Toluca, Mexico, which will serve Latin America's growing printing ink, textile, and coating industries. In Argentina, a group of five U.S. companies have announced plans for a $74.5-million petrochemical project, Imperial Chemical Industries will build a $16-million polyethylene plant, and Royal Dutch/Shell will invest $56-million in general development, probably including petrochemicals. In Colombia, B. F. Goodrich plans to build the country's first polyvinyl chloride plant.

Credit for Japan: The World Bank and a group of private U.S. investors will lend Japan's Kawasaki Steel Co. $12-million toward a new $21-million steel mill. The mill, expected to be completed next June, will add another 600,000 tons per year to the nation's mounting capacity (see Industries).

Better Penicillin: Britain's Beecham Group soon will announce details of a new synthetic penicillin that kills bacteria resistant to existing penicillins. The new drug was developed jointly with U.S.A. Bristol-Myers Corp., which plans to begin marketing in the next few months.

Ships from Peru: Peru hopes to become one of the premier shipbuilding centers in the Pacific with the construction of two new shipyards at Callao and Chimbote. Famed Dutch shipbuilder Cornelis Verolme, who has already built large facilities in the Netherlands, Ireland, and Brazil, is involved in the project. The Callao yard will house big ships, and the Chimbote yard smaller vessels.

More Toys: U.S. imports of toys, dolls, and games for the first six months of 1960 amounted to $17.8-million, a 17.8% increase over the same period last year, the U.S. Department of Commerce reports. Dolls and doll parts, valued at $2.6-million for the six months, accounted for the largest share of the increase.

Automatic Dry Cleaning: Two U.S. manufacturers, Whirlpool Corp. and Norge Div. of Borg-Warner, are testing automatic dry-cleaning machines at coin-operated laundry centers. The commercial introduction of these new machines in a few months is expected to have a radical effect on the cleaning business in the U.S.—and elsewhere. One of these machines is said to do a $6 to $8 cleaning job in an hour—for about $1.

Soviet Iron: The Soviet Union expects to begin exporting "considerable quantities of iron ore to Europe and Asia within the next few years with the development of the iron-rich Kursk Magnetic Anomaly, *Business Week* reports. Soviet geologists estimate Kursk deposits at 200,000-million tons, including 30,000-million tons of high-grade ore. By 1965, Kursk is scheduled to produce 36-million tons annually.

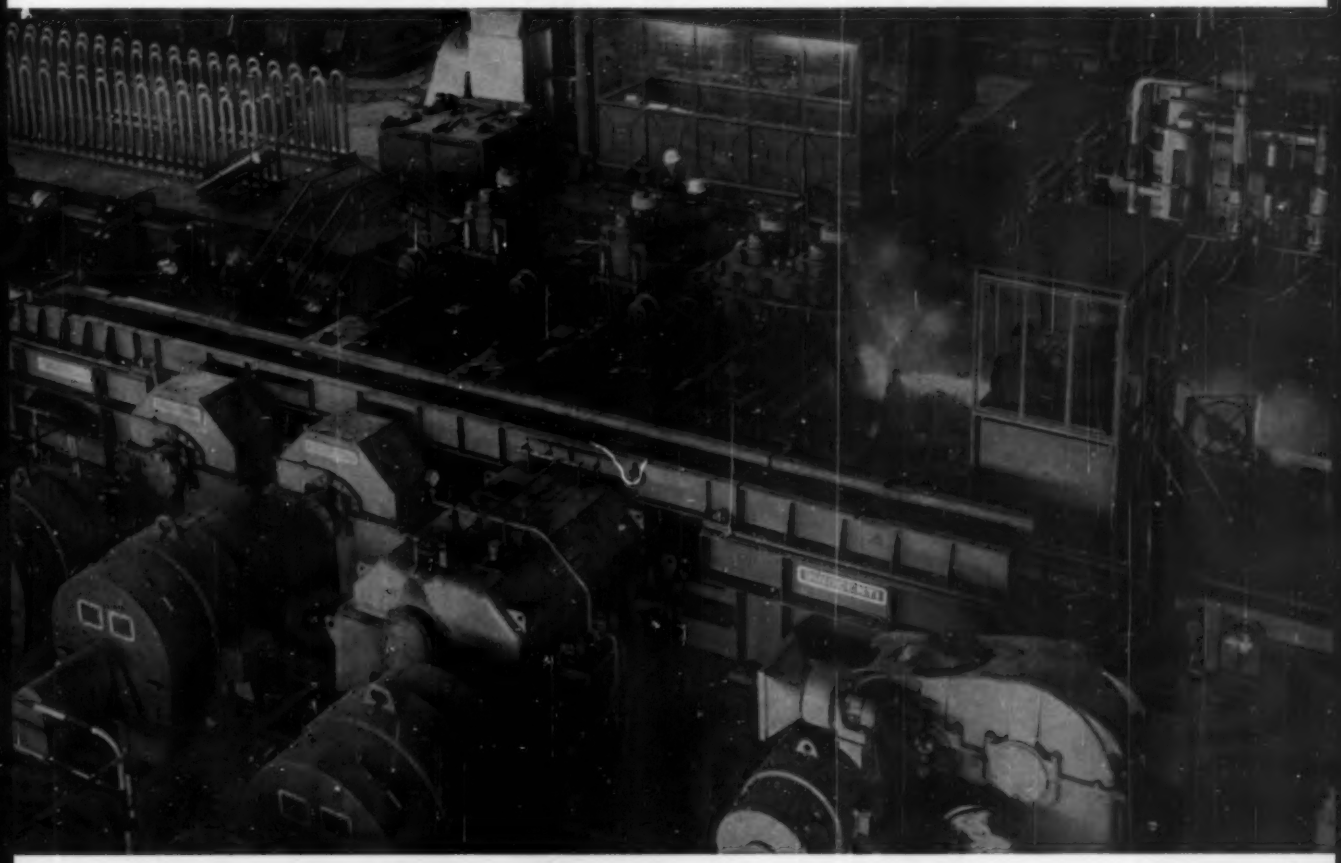
Value from Garbage: Israel will soon begin construction of a $1.1-million plant for the production of fertilizers out of garbage. The plant will be built by Dorr-Oliver of Amsterdam, Dutch subsidiary of a U.S. engineering firm, and will be financed by U.S. and Israeli investors.

Improved Design: Unitized frame design is expected to cut 30% off the cost of the automobile Toyota of Japan now is readying for overseas markets. The Toyopet Tiara—originally scheduled to sell in the U.S.A. for $2,300—sells for $1,650.

Rent a Fiat: Italy's Fiat and Hertz of the U.S.A. have jointly formed Hertz Italiana SpA, to supply car rental services in all major cities of Italy and Sicily. The fleet at first will consist of new Fiat cars, but later will add other makes.

Factory of Future: Soviet engineers have worked out principles for what they call the "machine tool factory of the future", the magazine *Economitsheskaja Gazeta* reports. The plant—expected to become a reality in 15 years—will turn out 10,000 internal-grinding machines of identical design and 400 non-standard machines annually. Full mechanization of all transport, service, and production processes is planned.

INNOCENTI **mechanical division**



continuous mill

Continuous Mill in operation at DALMINE S.p.A. works in Costa Volpino, Italy

for the manufacture of seamless steel tubes and pipes

The Continuous Mill associated with the Stretch Reducing Mill in the double version for making tubes from $^3/_8$" to 4" and from $2^3/_8$" to 7" successfully meets present requirements for consistently higher quality and quantity.

- Highest Capacity: the annual production can reach respectively 150,000 and 250,000 tons in the two versions.
- Highest yield: 93% - from billet to tube
- Complete automation: 1,5 man hour per produced ton
- Possibility to make tubes with 2,25 mm minimum thickness without stretching
- Extremely easy to operate
- Low installation costs in respect of capacity.

These features make the Continuous Mill the most reliable tube making equipment for new installations or the modernization of the existing ones.

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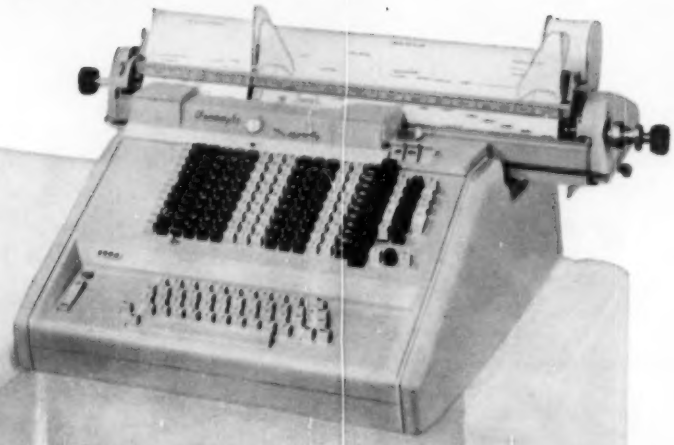

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